



RECEIVED

SEQUENCE LISTING

JUN 11 2002

TECH CENTER 1600/2900

<110> Allen, Stephen M.  
Hitz, William D.  
Rafalski, J. Antoni

<120> SUCROSE TRANSPORT PROTEINS

<130> BB1162 US NA

<140> 09/679,687

<141> 2000-10-05

<150> 60/081,148

<151> 1998-04-09

<150> PCT/US99/07562

<151> 1999-04-07

<160> 28

<170> Microsoft Office 97

<210> 1

<211> 2088

<212> DNA

<213> Zea mays

<400> 1

gcacgagaca	ctcctcacct	ctcctcgctc	cacgcacgcg	ctctctcacc	cgtggttat	60
tagtcgtcgt	cccttgatt	tcgacactct	ctctagcggg	cgctgttcc	gccgccgtcc	120
atcgatccta	gctagctagc	tagctagggc	gcgaccgtcg	tctcggtggt	tggtgacagg	180
tcccgtacgt	gtgtgctcgc	catggctcgt	ggcgacggcg	ggcagctggc	ggagctgtcc	240
gcgggggtcc	gcggcgcggc	cgcggtggtg	gaccacgtgg	ccccgatcag	cctcgggagg	300
ctcctcctcg	ccggcatggt	cgccggcggc	gtgcagtacg	gctgggcgct	gcagctctcc	360
ctcctcacgc	cctacgtgca	gactctgggg	ctttcacatg	cgctcacttc	attcatgtgg	420
ctctgcggcc	ctattgccc	cttagtggtc	caaccgctgg	ttggcctgta	cagcgacagg	480
tgtacatcga	gatgggggag	acggaggccg	tttatcctga	cagggtgcat	gctcatctgc	540
gttgccgtca	ttgttgctcg	attctcgtca	gacatcggag	ctgctctagg	ggacacgaag	600
gaacactgca	gcctctacca	cggtcctcgt	tggcacgctg	cgatcgtgta	cgttctgggg	660
ttttggctcc	ttgacttctc	caacaacact	gtgcagggtc	cagcacgtgc	tatgatggct	720
gatctatgtg	accatcatgg	gccaagtgcg	gctaactcca	tcttctgttc	ttggatggcg	780
ctgggaaaca	tcctaggcta	ctcctctggc	tccacgaaca	attggcacia	gtggtttccc	840
ttccttaaaa	cgagcgccct	ctgtgaggcc	tgtgcgaacc	tgaaagggtg	atctctgggt	900
gccgtggtgt	tcctagtcc	gtgcctgacg	gtaaccctga	tcttcgcaa	ggagggtgcc	960
tacagagcga	acgagaacct	cccgaacgac	aaggccggcg	gcgaggtcga	gactgagcct	1020
accggggcac	ttgcccgtgt	caagggtctc	aaggacctgc	ctcccgggat	gccgtccgtg	1080
ctcctcgtga	ctgccatcac	ctggctttcg	tggttcccgt	tcctcctcta	cgacaccgac	1140
tggtatgggc	gggagatcta	ccacggcgac	cccaaggga	gcaacgcca	gatctcggcg	1200
ttcaacgaag	gtgtccgagt	cggcgcgttc	gggctgctac	tcaactcggg	tattctaggg	1260
ttcagctcgt	tcctgatcga	gccccatgtc	cggaaggctg	ggccgagggt	ggtgtgggtg	1320
acgagcaact	tcattggtctg	cgctgccatg	gcggccaccg	cgctgatcag	cttctgggtg	1380
ctcagggaact	accacgggta	cgtgcaggac	gccatcaccg	cgaacgccag	catcaaggcc	1440
gtctgcctcg	tcctcttcgc	cttccctggg	gtccctctcg	ccatcctgta	cagcgtccc	1500
ttcgcggtga	cggcgccagt	ggcgccacc	cggggcgcg	ggcaggggct	gtgcaccggc	1560
gtcctcaaca	tcctcatcgt	catccctcag	gtgatcatcg	cgctgggcgc	cggcccgtgg	1620
gacgcgctgt	tcgggaagg	caacatccc	gcgttcggcg	tcgcgtcggc	cttcgccctc	1680
gtcggcgcg	tcgtggcggt	gttcctgctg	cccaagatct	ccaagcgcca	gttcggggcc	1740
gtcagcgcg	gcggccactg	atcgaacccg	gccggggccg	gccgcggcca	cgcagcccgg	1800
caagagctgt	atgttggtga	gagttgaaca	gaaacctatg	atgtgtgctt	ctgtagttct	1860
gttggttgtg	gtcgatcgat	gggcgttgcg	tggcagcgtg	ggcaagcgag	gcgaggtgcg	1920

cggatccaaa aaaagggcca ttcgatcaat caatgtgtag tagagtacaa ctagacgatg 1980  
 atgttcacat catttgtctt taatacatat cggtttctat tgtcttttaa aaaaaaaaaa 2040  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2088

<210> 2  
 <211> 519  
 <212> PRT  
 <213> Zea mays

.<400> 2  
 Met Ala Arg Gly Asp Gly Gly Gln Leu Ala Glu Leu Ser Ala Gly Val  
 1 5 10 15  
 Arg Gly Ala Ala Ala Val Val Asp His Val Ala Pro Ile Ser Leu Gly  
 20 25 30  
 Arg Leu Ile Leu Ala Gly Met Val Ala Gly Gly Val Gln Tyr Gly Trp  
 35 40 45  
 Ala Leu Gln Leu Ser Leu Leu Thr Pro Tyr Val Gln Thr Leu Gly Leu  
 50 55 60  
 Ser His Ala Leu Thr Ser Phe Met Trp Leu Cys Gly Pro Ile Ala Gly  
 65 70 75 80  
 Leu Val Val Gln Pro Leu Val Gly Leu Tyr Ser Asp Arg Cys Thr Ser  
 85 90 95  
 Arg Trp Gly Arg Arg Arg Pro Phe Ile Leu Thr Gly Cys Met Leu Ile  
 100 105 110  
 Cys Val Ala Val Ile Val Val Gly Phe Ser Ser Asp Ile Gly Ala Ala  
 115 120 125  
 Leu Gly Asp Thr Lys Glu His Cys Ser Leu Tyr His Gly Pro Arg Trp  
 130 135 140  
 His Ala Ala Ile Val Tyr Val Leu Gly Phe Trp Leu Leu Asp Phe Ser  
 145 150 155 160  
 Asn Asn Thr Val Gln Gly Pro Ala Arg Ala Met Met Ala Asp Leu Cys  
 165 170 175  
 Asp His His Gly Pro Ser Ala Ala Asn Ser Ile Phe Cys Ser Trp Met  
 180 185 190  
 Ala Leu Gly Asn Ile Leu Gly Tyr Ser Ser Gly Ser Thr Asn Asn Trp  
 195 200 205  
 His Lys Trp Phe Pro Phe Leu Lys Thr Ser Ala Cys Cys Glu Ala Cys  
 210 215 220  
 Ala Asn Leu Lys Gly Ala Phe Leu Val Ala Val Val Phe Leu Val Leu  
 225 230 235 240  
 Cys Leu Thr Val Thr Leu Ile Phe Ala Lys Glu Val Pro Tyr Arg Ala  
 245 250 255  
 Asn Glu Asn Leu Pro Thr Thr Lys Ala Gly Gly Glu Val Glu Thr Glu  
 260 265 270

Pro Thr Gly Pro Leu Ala Val Leu Lys Gly Phe Lys Asp Leu Pro Pro  
 275 280 285  
 Gly Met Pro Ser Val Leu Leu Val Thr Ala Ile Thr Trp Leu Ser Trp  
 290 295 300  
 Phe Pro Phe Ile Leu Tyr Asp Thr Asp Trp Met Gly Arg Glu Ile Tyr  
 305 310 315 320  
 His Gly Asp Pro Lys Gly Ser Asn Ala Gln Ile Ser Ala Phe Asn Glu  
 325 330 335  
 Gly Val Arg Val Gly Ala Phe Gly Leu Leu Leu Asn Ser Val Ile Leu  
 340 345 350  
 Gly Phe Ser Ser Phe Leu Ile Glu Pro Met Cys Arg Lys Val Gly Pro  
 355 360 365  
 Arg Val Val Trp Val Thr Ser Asn Phe Met Val Cys Val Ala Met Ala  
 370 375 380  
 Ala Thr Ala Leu Ile Ser Phe Trp Ser Leu Arg Asp Tyr His Gly Tyr  
 385 390 395 400  
 Val Gln Asp Ala Ile Thr Ala Asn Ala Ser Ile Lys Ala Val Cys Leu  
 405 410 415  
 Val Leu Phe Ala Phe Leu Gly Val Pro Leu Ala Ile Leu Tyr Ser Val  
 420 425 430  
 Pro Phe Ala Val Thr Ala Gln Leu Ala Ala Thr Arg Gly Gly Gly Gln  
 435 440 445  
 Gly Leu Cys Thr Gly Val Leu Asn Ile Ser Ile Val Ile Pro Gln Val  
 450 455 460  
 Ile Ile Ala Leu Gly Ala Gly Pro Trp Asp Ala Leu Phe Gly Lys Gly  
 465 470 475 480  
 Asn Ile Pro Ala Phe Gly Val Ala Ser Ala Phe Ala Leu Val Gly Gly  
 485 490 495  
 Val Val Gly Val Phe Leu Leu Pro Lys Ile Ser Lys Arg Gln Phe Arg  
 500 505 510  
 Ala Val Ser Ala Gly Gly His  
 515

<210> 3  
 <211> 825  
 <212> DNA  
 <213> Zea mays

<400> 3  
 gcacgagtta agttggatct cttctgatct gtactcaagc aaacttcac acatcatcgg 60  
 ggcaaataaa acagtcaaga tcacggcatt ggtgttttc tctcttctcg gattgccact 120  
 ctccatcact tacagcgttc cgttttctgt gactgctgag ctgactgccg gtacaggagg 180  
 tggacaaggt ttggccacag gagtcctaaa tcttgctatc gtggttcccc agatagtagt 240  
 gtcgcttgga gcaggccat gggacgctct gtatggagga gggaataccc cggcgcttcgt 300  
 cttggcttcg gtcttctccc tggcagcagg tgtgctcgca gttctcaagc tgccaaagct 360  
 gtccaactcg taccaatctg ccgggttcca tggatttggc tgatgctcat gcccaaaaca 420

```

ccccgctctg ccatgtaaaa catcacacca acacttggcc ccattttgcc attcgtttac 480
agagaaatga ttcttttttc ctcgtacaac tacagaataa tgacagtga agtaggagtt 540
taggtgagag agagagagag gctaggtagg ttgatgtgaa ggtgtaaaag ctgtatcctc 600
ctttttttgt ttttgttttt gtttttgaca gtgtatgtaa gagctgtcca caagaaaatt 660
tacaagtggg gtaacctgcc ctcgtttgta cattgtacta ctactacatg acaatcatat 720
gtcctttgtc tttatccaag gttgaagacg taaactgagg ccactctatt atcttggggc 780
atgaaaaaaa aaaaaaaaaa aaaaaaaact cgaaactagt tctct 825

```

<210> 4  
 <211> 133  
 <212> PRT  
 <213> Zea mays

```

<400> 4
His Glu Leu Ser Trp Ile Ser Ser Asp Leu Tyr Ser Ser Lys Leu His
  1              5              10              15

His Ile Ile Gly Ala Asn Lys Thr Val Lys Ile Thr Ala Leu Val Val
              20              25              30

Phe Ser Leu Leu Gly Leu Pro Leu Ser Ile Thr Tyr Ser Val Pro Phe
      35              40              45

Ser Val Thr Ala Glu Leu Thr Ala Gly Thr Gly Gly Gly Gln Gly Leu
  50              55              60

Ala Thr Gly Val Leu Asn Leu Ala Ile Val Val Pro Gln Ile Val Val
  65              70              75              80

Ser Leu Gly Ala Gly Pro Trp Asp Ala Leu Tyr Gly Gly Gly Asn Thr
              85              90              95

Pro Ala Phe Val Leu Ala Ser Val Phe Ser Leu Ala Ala Gly Val Leu
      100              105              110

Ala Val Leu Lys Leu Pro Lys Leu Ser Asn Ser Tyr Gln Ser Ala Gly
      115              120              125

Phe His Gly Phe Gly
      130

```

<210> 5  
 <211> 1977  
 <212> DNA  
 <213> Zea mays

```

<400> 5
gcggcggacc acgtggcgcc gatcagcctc ggcaggctca tcctcgccgg catggtcgcc 60
ggcggcgctg agtacggctg ggcgctgcag ctctccctcc tcacgcccta cgtgcagact 120
ctggggctct cacatgccct cacttcattc atgtggctat gcggtcctat tgctggctta 180
gtggtccaac cgctggtttg cctgtacagc gatagggtgca cagcaagatg gggaagacgc 240
aggccattta tcctgatagg atgcatgctc atctgccttg ccgtcattgt tgttggcttc 300
tcgtccgaca tcggagctgc tctaggggac acaaaggaac actgcagcct ctaccacggc 360
cctcgttggc atgctgcgat cgtgtacgtt ctggggtttt ggctccttga cttctccaac 420
aatactgtgc aaggtccagc gcggtgctat atggctgata tgtgcggtca tcatgggcct 480
agtgcagcca actcaatctt ctgttcttgg atggcgctgg gaaacatcct aggctattcc 540
tctggctcca caaacaactg gcacaagtgg tttccgttcc ttatgacaaa cgcgtgctgt 600
gaagcctgcg caaacctgaa aggcgcgttt ctgggtggctg tgggtgtcct aatcatgtgc 660
ttgactataa ccctgttctt cgccaaggaa gtgccctaca gaggaacca gaacctcccc 720
acaaaggcaa acggcgagggt cgagactgaa ccttcgggcc cactcgctgt gctcaagggc 780
ttcaagaact tgcccacggg gatgccgtcc gtgctcctcg taactggact cacctggctc 840

```

```

tcttggttcc cgttcatcct ctacgacacc gactggatgg gccgtgagat ctaccacggc 900
gaccccaagg gtagcaacgc tcagatctcg gcgttcgacg aaggcgtcag agttggctcg 960
ttcgggctgc tgctcaactc gatcgttcta ggattcagct cgttcctgat cgagcccatg 1020
tgccggaagg tcggggccgag ggtggtgtgg gtgacgagca acttcatggt ctgcgtcgcc 1080
atggcggcca ccgcgctgat cagcttctgg tcgctcaagg actaccacgg atacgtgcag 1140
gacgccatca ccgccagcac gagcatcaag gccgtctgcc tcgtcctctt cgcgttcctg 1200
gggtgtccctc tcgccatcct gtacagcgtc ccgttcgcgg tgacggcgca gctggcggcc 1260
acgaagggcg gcggggcagg gctgtgcacc ggctgtctca acatctccat cgtcatccct 1320
caggtgatca tcgcgctggg cgcgggcccc tgggacgcgc tgttcggcaa gggcaacatc 1380
ccggcgttcg gcgtggcgtc ggggttcgcc ctcatcggcg gcgtcgtggg cgtgttcctg 1440
ctgcccaaga tctccaagcg ccagttccgc gccgtcagcg cgggcggcca ctgatcgcg 1500
ccgccgcgcc ggagcacggc acggcggcac agcccagccg tgctagagct gtatgttttg 1560
aaagtgtgaaa cagaataaga agcggggcgaa acgagaaaac catgcatgtc atgtgtgtgc 1620
ttttgttgtg tgtggggtgg ggcaagcgag gcgaggtgtg tggaggtgaa gtgaaggtga 1680
gcatatccag caccagctgg taccaaggtc gggctctctg gctagtgtta ttagctagt 1740
taaggagcga gtaggtcagt taaggctggt gcgtcgtgag ggctgtcttg tgtgtagcta 1800
cagcagacgg ttcatcagaa ggattattcg tgcagtatat acagtacaac tagacaatga 1860
tggtgatgat tgggtctagag ctagaggcct atagccctat actactgtgt attgtccgcc 1920
gttttagttt tttggtccca tcccatcaat gcaaccgcct tgttttaaaa aaaaaaa 1977

```

<210> 6  
<211> 497  
<212> PRT  
<213> Zea mays

```

<400> 6
Ala Ala Asp His Val Ala Pro Ile Ser Leu Gly Arg Leu Ile Leu Ala
  1              5              10              15

Gly Met Val Ala Gly Gly Val Gln Tyr Gly Trp Ala Leu Gln Leu Ser
      20              25              30

Leu Leu Thr Pro Tyr Val Gln Thr Leu Gly Leu Ser His Ala Leu Thr
  35              40              45

Ser Phe Met Trp Leu Cys Gly Pro Ile Ala Gly Leu Val Val Gln Pro
  50              55              60

Leu Val Gly Leu Tyr Ser Asp Arg Cys Thr Ala Arg Trp Gly Arg Arg
  65              70              75              80

Arg Pro Phe Ile Leu Ile Gly Cys Met Leu Ile Cys Leu Ala Val Ile
      85              90              95

Val Val Gly Phe Ser Ser Asp Ile Gly Ala Ala Leu Gly Asp Thr Lys
 100              105              110

Glu His Cys Ser Leu Tyr His Gly Pro Arg Trp His Ala Ala Ile Val
 115              120              125

Tyr Val Leu Gly Phe Trp Leu Leu Asp Phe Ser Asn Asn Thr Val Gln
 130              135              140

Gly Pro Ala Arg Ala Met Met Ala Asp Leu Cys Gly His His Gly Pro
 145              150              155              160

Ser Ala Ala Asn Ser Ile Phe Cys Ser Trp Met Ala Leu Gly Asn Ile
      165              170              175

Leu Gly Tyr Ser Ser Gly Ser Thr Asn Asn Trp His Lys Trp Phe Pro
 180              185              190

```

Phe	Leu	Met	Thr	Asn	Ala	Cys	Cys	Glu	Ala	Cys	Ala	Asn	Leu	Lys	Gly		
		195					200					205					
Ala	Phe	Leu	Val	Ala	Val	Val	Phe	Leu	Ile	Met	Cys	Leu	Thr	Ile	Thr		
	210					215					220						
Leu	Phe	Phe	Ala	Lys	Glu	Val	Pro	Tyr	Arg	Gly	Asn	Gln	Asn	Leu	Pro		
225					230					235					240		
Thr	Lys	Ala	Asn	Gly	Glu	Val	Glu	Thr	Glu	Pro	Ser	Gly	Pro	Leu	Ala		
				245					250					255			
Val	Leu	Lys	Gly	Phe	Lys	Asn	Leu	Pro	Thr	Gly	Met	Pro	Ser	Val	Leu		
			260					265					270				
Leu	Val	Thr	Gly	Leu	Thr	Trp	Leu	Ser	Trp	Phe	Pro	Phe	Ile	Leu	Tyr		
		275					280					285					
Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	Tyr	His	Gly	Asp	Pro	Lys	Gly		
	290					295					300						
Ser	Asn	Ala	Gln	Ile	Ser	Ala	Phe	Asp	Glu	Gly	Val	Arg	Val	Gly	Ser		
305					310					315					320		
Phe	Gly	Leu	Leu	Leu	Asn	Ser	Ile	Val	Leu	Gly	Phe	Ser	Ser	Phe	Leu		
				325					330					335			
Ile	Glu	Pro	Met	Cys	Arg	Lys	Val	Gly	Pro	Arg	Val	Val	Trp	Val	Thr		
			340					345					350				
Ser	Asn	Phe	Met	Val	Cys	Val	Ala	Met	Ala	Ala	Thr	Ala	Leu	Ile	Ser		
		355					360					365					
Phe	Trp	Ser	Leu	Lys	Asp	Tyr	His	Gly	Tyr	Val	Gln	Asp	Ala	Ile	Thr		
	370					375					380						
Ala	Ser	Thr	Ser	Ile	Lys	Ala	Val	Cys	Leu	Val	Leu	Phe	Ala	Phe	Leu		
385					390					395					400		
Gly	Val	Pro	Leu	Ala	Ile	Leu	Tyr	Ser	Val	Pro	Phe	Ala	Val	Thr	Ala		
				405					410					415			
Gln	Leu	Ala	Ala	Thr	Lys	Gly	Gly	Gly	Gln	Gly	Leu	Cys	Thr	Gly	Val		
			420					425					430				
Leu	Asn	Ile	Ser	Ile	Val	Ile	Pro	Gln	Val	Ile	Ile	Ala	Leu	Gly	Ala		
		435					440					445					
Gly	Pro	Trp	Asp	Ala	Leu	Phe	Gly	Lys	Gly	Asn	Ile	Pro	Ala	Phe	Gly		
	450					455					460						
Val	Ala	Ser	Gly	Phe	Ala	Leu	Ile	Gly	Gly	Val	Val	Gly	Val	Phe	Leu		
465					470					475					480		
Leu	Pro	Lys	Ile	Ser	Lys	Arg	Gln	Phe	Arg	Ala	Val	Ser	Ala	Gly	Gly		
				485					490					495			

His

<210> 7  
 <211> 1653  
 <212> DNA  
 <213> Oryza sativa

<400> 7  
 gcacgagatc actgcttcca tcgctgccgc agttctcacc gtcggattct ccgccgacct 60  
 cggccgaatc ttccggcgatt ccatcacccc gggctccacc cgcctcggcg ccatcatcgt 120  
 ctacctcgtc ggcttctggc tcctcgacgt cggcaacaac gctacacagg gaccctgcag 180  
 ggccttctct gccgacctca ccgagaatga cccaaggagg actcggatag ctaatgctta 240  
 cttctcattg ttcatggccc tgggaaacat acttgatat gccactggag catacagtgg 300  
 ctggtacaag atattcccgt tcaccgttac tccatcatgt agcatcagct gtgccaactt 360  
 caagtctgcc tttctacttg atattatcat tttggtggtc actacatgca tcaactgtagc 420  
 atcagtgcaa gaggctcaat cctttggaag tgatgaagca gatcaccta gcacagaaca 480  
 ggaagctttc ctctgggaac tttttggatc attccggtac tttacattac cggtttggat 540  
 ggttttgatt gttactgccc tcacatggat tggatggttt ccatttatcc tctttgatac 600  
 cgattggatg ggtcgagaga tctatcgtgg aagtccagat gatccaagta taactcagag 660  
 ctatcatgat ggtgtgagaa tgggttcttt tggctctgat ctgaactcgg tccttcttgg 720  
 attcacttct attgtactag agaagttatg tcggaagtgg ggagctggac tgggtgtggg 780  
 tgtctccaat atcctaattg cattgtgctt tgtggcaatg cttgtaataa catatgtggc 840  
 aaagaatatg gattatccac ctagtggagt accaccaacc ggcattgtca ttgcttccct 900  
 ggtagttttt acaatttttag gagcgcccc tggcgatcac tacagtatac catatgcaat 960  
 ggctgctagt cgggttgaaa atctgggact tggccaaggt ctagcaatgg gcattcttaa 1020  
 tttggctatt gtcataccac aggttattgt gtcactgggt agcgggccct gggaccaact 1080  
 gtttggtggt ggcaatgcac cagcctttgc agtggctgct gctgcatctt ttatcggtgg 1140  
 gctggtggtt attctgggcc ttccacgagc ccgcattgca tcaaggagga gaggtcaccg 1200  
 ataagaatat tgctacatat aaattgtcgg ccattctttg caattcgact cataagaggc 1260  
 actcggaacg ctatgcagtg catgggggaa ttgtatatta tctccgaatc aagaagggga 1320  
 taatgcttgc tttctccatg agctattttt gcctttttca tgccggatca tcatatgctg 1380  
 tcgtacattg gatgatctta tgctgttgta cattggatgt tggtcatttg tagagatact 1440  
 agtgaataaa agttgcagga gttggttcac tcgagaaaat tctggtcagt atgtcgtcca 1500  
 tctgctgcac gacagcagtt aggagccgaa tagcatgtcc atgggttttc atcaaatgtt 1560  
 gtatcatcat ttgttttttg atacgttcag acggcttcag tgctgtgtga atatatatgt 1620  
 atggaatata tcgagaaaaa aaaaaaaaaa aaa 1653

<210> 8  
 <211> 400  
 <212> PRT  
 <213> Oryza sativa

<400> 8  
 His Glu Ile Thr Ala Ser Ile Ala Ala Val Leu Thr Val Gly Phe  
 1 5 10 15  
 Ser Ala Asp Leu Gly Arg Ile Phe Gly Asp Ser Ile Thr Pro Gly Ser  
 20 25 30  
 Thr Arg Leu Gly Ala Ile Ile Val Tyr Leu Val Gly Phe Trp Leu Leu  
 35 40 45  
 Asp Val Gly Asn Asn Ala Thr Gln Gly Pro Cys Arg Ala Phe Leu Ala  
 50 55 60  
 Asp Leu Thr Glu Asn Asp Pro Arg Arg Thr Arg Ile Ala Asn Ala Tyr  
 65 70 75 80  
 Phe Ser Leu Phe Met Ala Leu Gly Asn Ile Leu Gly Tyr Ala Thr Gly  
 85 90 95  
 Ala Tyr Ser Gly Trp Tyr Lys Ile Phe Pro Phe Thr Val Thr Pro Ser  
 100 105 110

Cys	Ser	Ile	Ser	Cys	Ala	Asn	Phe	Lys	Ser	Ala	Phe	Leu	Leu	Asp	Ile		
		115					120					125					
Ile	Ile	Leu	Val	Val	Thr	Thr	Cys	Ile	Thr	Val	Ala	Ser	Val	Gln	Glu		
	130					135					140						
Pro	Gln	Ser	Phe	Gly	Ser	Asp	Glu	Ala	Asp	His	Pro	Ser	Thr	Glu	Gln		
145					150					155					160		
Glu	Ala	Phe	Leu	Trp	Glu	Leu	Phe	Gly	Ser	Phe	Arg	Tyr	Phe	Thr	Leu		
			165						170					175			
Pro	Val	Trp	Met	Val	Leu	Ile	Val	Thr	Ala	Leu	Thr	Trp	Ile	Gly	Trp		
		180						185					190				
Phe	Pro	Phe	Ile	Leu	Phe	Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	Tyr		
	195						200					205					
Arg	Gly	Ser	Pro	Asp	Asp	Pro	Ser	Ile	Thr	Gln	Ser	Tyr	His	Asp	Gly		
	210					215					220						
Val	Arg	Met	Gly	Ser	Phe	Gly	Leu	Met	Leu	Asn	Ser	Val	Leu	Leu	Gly		
225					230					235					240		
Phe	Thr	Ser	Ile	Val	Leu	Glu	Lys	Leu	Cys	Arg	Lys	Trp	Gly	Ala	Gly		
			245					250					255				
Leu	Val	Trp	Gly	Val	Ser	Asn	Ile	Leu	Met	Ala	Leu	Cys	Phe	Val	Ala		
		260						265					270				
Met	Leu	Val	Ile	Thr	Tyr	Val	Ala	Lys	Asn	Met	Asp	Tyr	Pro	Pro	Ser		
	275					280						285					
Gly	Val	Pro	Pro	Thr	Gly	Ile	Val	Ile	Ala	Ser	Leu	Val	Val	Phe	Thr		
	290					295					300						
Ile	Leu	Gly	Ala	Pro	Leu	Ala	Ile	Thr	Tyr	Ser	Ile	Pro	Tyr	Ala	Met		
305					310					315					320		
Ala	Ala	Ser	Arg	Val	Glu	Asn	Leu	Gly	Leu	Gly	Gln	Gly	Leu	Ala	Met		
			325					330						335			
Gly	Ile	Leu	Asn	Leu	Ala	Ile	Val	Ile	Pro	Gln	Val	Ile	Val	Ser	Leu		
		340						345					350				
Gly	Ser	Gly	Pro	Trp	Asp	Gln	Leu	Phe	Gly	Gly	Gly	Asn	Ala	Pro	Ala		
	355					360						365					
Phe	Ala	Val	Ala	Ala	Ala	Ala	Ser	Phe	Ile	Gly	Gly	Leu	Val	Ala	Ile		
	370				375						380						
Leu	Gly	Leu	Pro	Arg	Ala	Arg	Ile	Ala	Ser	Arg	Arg	Arg	Gly	His	Arg		
385					390					395					400		

<210> 9

<211> 2375

<212> DNA

<213> Oryza sativa

<400> 9



```

gcacgaggtt ctaacccgcg ccttcgccga gggaggccga ccaacgcata aatcaaacac 60
acaagcacac cagcgcgacg cagcagcagg ggaggagaca atttcctatt ctctctcgcc 120
ccgcgtcgcc tcgcctgagt ctgactctcc aaacgccgac cagtgcgccc gcgagccttg 180
ccccttgccc gcgcgagatct caccaaaccc taccagatct gcgccccgcc atggactccg 240
ccgcgcggcg tggcggcctc acggccatcc gcctgcccta ccgccacctc cgcgacgcgg 300
agatggagct cgtcagcctc aacggcggca cccccgcgg aggtccccc aaggaccccg 360
acgccacgca ccagcagggg cccccgcgg cccgtaccac caccaccagg aagctcgctc 420
tcgcctgcat ggtcgccgcc ggcgtgcagt tcggctgggc gcttcagctc tcgctcctca 480
cgccctacat ccagacccta ggaatagacc atgccatggc atcattcatt tggctttgtg 540
gacctattac tggttttgtg gttcaacctat gtgttggtgt ctggagtgc aaatgccgtt 600
caaagtattg aagaaggaga ccgttcattt tggctggatg cttgatgata tgctttgctg 660
taactttaat cggattttct gcagaccttg gttacatttt aggagatacc actgagcact 720
gcagtacata taaaggttca agatttcgag cagctattat tttcgttctt gggttctgga 780
tgttgatct cgcaaacaat acagttcaag gtctgtctcg tgccctttta gctgaccttt 840
caggtcctga tcagtgtaat tctgcaaatg caattttttg cacatggatg gctgttgga 900
acgttcttgg ttttctatct ggtgctagt ggaattggca caagtggttt ccttttctaa 960
tgacaagagc atgctgtgaa gcttgtagta atttgaaagc cgcttttctg gttgcagttg 1020
tattcctttt gttttgtatg tctgttacct tgtactttgc tgaagagatc ccgctggaac 1080
caacagatgc acaacgatta tctgattctg cgcctctcct gaatggttct agagatgata 1140
acaatgcatc aaatgaacct cgtaatggag cacttcctaa tggatcatac gatggaagca 1200
atgtccagc taactccaac gctgaggact ccaattcaaa cagagagaat gtcgaagttt 1260
tcaatgatgg accaggagca gttttggtga atattttgac tagcatgagg catctacctc 1320
ctggaatgta ctctgttctt ctagtattgg ctctaactg gttgtcgtgg tttccctttt 1380
tcctttttga tactgactgg atgggacgtg aggtttacca tggggacca aatggcaact 1440
tgagtgaag gaaagcttat gacaacggtg tccgagaagg tgcatttggt ttgctattga 1500
attcagttgt ccttggaatt gggctcctcc ttgttgatcc actatgccga ctgatgggtg 1560
ctagactggg ttgggcaatc agcaacttca cagtgtttat ctgcatgctg gctacagcaa 1620
tattaagttg gatctctttt gatttgtact caagtaaact tcaccacatc attggagcaa 1680
ataaaacagt gaagaattca gccttgattg tttctcctt acttgactg ccactctcga 1740
tcacatatag cgttcctttt tctgtgactg ctgagctgac tgctggaaca ggaggtggac 1800
aaggtctggc aacaggagtc ctgaaccttg caatcgttgt tccgcagata gtagtgtcac 1860
taggagcagg tccatgggat gctctctttg ggggaggga cgtccctgct ttcgccttgg 1920
cttcctgttt ctactagga gctggtgtcc tcgcggtcct taagctacct aagctgcaa 1980
actcttacag atctgctggg ttccatggat ttggctgagc agaacaccag ccgcatgggtg 2040
tgtaacattg agaaatgcaa ctccattttg ccattcgttt acagtgaaat gattcttttt 2100
acctactact acaacagaat aagctgaaaa gatagagatt aggatagaga gctaggtaac 2160
tagtccagtt aggttgatgt gcatacaagg caattggaag gtgtaagagc tgtatctact 2220
tttttgacag aaaaatgtaa gctctgcccg aatgacatgg cggatagatt ttacaatgga 2280
tgtaatcatg tactatatat aacacgtttt ggtcacagct tgccaagttt catgtatagt 2340
actgctacta aaaaaaaaaa aaaaaaaaaa aaaaaa 2375

```

<210> 10  
 <211> 667  
 <212> PRT  
 <213> *Oryza sativa*

```

<400> 10
Pro Ala Pro Ser Pro Arg Glu Ala Asp Gln Arg Ile Asn Gln Thr His
  1                      5                      10                      15

Lys His Thr Thr Arg Thr Gln Gln Gln Gly Arg Arg Gln Phe Pro Ile
          20                      25                      30

Leu Pro Arg Pro Ala Ser Pro Arg Leu Ser Leu Thr Leu Gln Thr Pro
          35                      40                      45

Thr Ser Asp Ala Ala Ser Leu Ala Pro Cys Pro Arg Arg Ser His Gln
          50                      55                      60

Thr Leu Pro Asp Leu Arg Pro Ala Met Asp Ser Ala Ala Gly Gly Gly
          65                      70                      75                      80

```

Gly	Leu	Thr	Ala	Ile	Arg	Leu	Pro	Tyr	Arg	His	Leu	Arg	Asp	Ala	Glu	
				85					90					95		
Met	Glu	Leu	Val	Ser	Leu	Asn	Gly	Gly	Thr	Pro	Arg	Gly	Gly	Ser	Pro	
			100					105					110			
Lys	Asp	Pro	Asp	Ala	Thr	His	Gln	Gln	Gly	Pro	Pro	Ala	Ala	Arg	Thr	
		115					120					125				
Thr	Thr	Thr	Arg	Lys	Leu	Val	Leu	Ala	Cys	Met	Val	Ala	Ala	Gly	Val	
		130				135					140					
Gln	Phe	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Ile	Gln	
145					150					155					160	
Thr	Leu	Gly	Ile	Asp	His	Ala	Met	Ala	Ser	Phe	Ile	Trp	Leu	Cys	Gly	
				165					170					175		
Pro	Ile	Thr	Gly	Phe	Val	Val	Gln	Pro	Cys	Val	Gly	Val	Trp	Ser	Asp	
			180					185					190			
Lys	Cys	Arg	Ser	Lys	Tyr	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Leu	Ala	Gly	
		195					200					205				
Cys	Leu	Met	Ile	Cys	Phe	Ala	Val	Thr	Leu	Ile	Gly	Phe	Ser	Ala	Asp	
	210					215					220					
Leu	Gly	Tyr	Ile	Leu	Gly	Asp	Thr	Thr	Glu	His	Cys	Ser	Thr	Tyr	Lys	
225					230					235					240	
Gly	Ser	Arg	Phe	Arg	Ala	Ala	Ile	Ile	Phe	Val	Leu	Gly	Phe	Trp	Met	
				245					250					255		
Leu	Asp	Leu	Ala	Asn	Asn	Thr	Val	Gln	Gly	Pro	Ala	Arg	Ala	Leu	Leu	
			260					265					270			
Ala	Asp	Leu	Ser	Gly	Pro	Asp	Gln	Cys	Asn	Ser	Ala	Asn	Ala	Ile	Phe	
		275					280					285				
Cys	Thr	Trp	Met	Ala	Val	Gly	Asn	Val	Leu	Gly	Phe	Ser	Ser	Gly	Ala	
		290				295					300					
Ser	Gly	Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Met	Thr	Arg	Ala	Cys	
305					310					315					320	
Cys	Glu	Ala	Cys	Ser	Asn	Leu	Lys	Ala	Ala	Phe	Leu	Val	Ala	Val	Val	
				325					330					335		
Phe	Leu	Leu	Phe	Cys	Met	Ser	Val	Thr	Leu	Tyr	Phe	Ala	Glu	Glu	Ile	
			340					345					350			
Pro	Leu	Glu	Pro	Thr	Asp	Ala	Gln	Arg	Leu	Ser	Asp	Ser	Ala	Pro	Leu	
		355					360					365				
Leu	Asn	Gly	Ser	Arg	Asp	Asp	Asn	Asn	Ala	Ser	Asn	Glu	Pro	Arg	Asn	
		370				375					380					
Gly	Ala	Leu	Pro	Asn	Gly	His	Thr	Asp	Gly	Ser	Asn	Val	Pro	Ala	Asn	
385					390					395					400	

Ser Asn Ala Glu Asp Ser Asn Ser Asn Arg Glu Asn Val Glu Val Phe  
 405 410 415  
 Asn Asp Gly Pro Gly Ala Val Leu Val Asn Ile Leu Thr Ser Met Arg  
 420 425 430  
 His Leu Pro Pro Gly Met Tyr Ser Val Leu Leu Val Met Ala Leu Thr  
 435 440 445  
 Trp Leu Ser Trp Phe Pro Phe Phe Leu Phe Asp Thr Asp Trp Met Gly  
 450 455 460  
 Arg Glu Val Tyr His Gly Asp Pro Asn Gly Asn Leu Ser Glu Arg Lys  
 465 470 475 480  
 Ala Tyr Asp Asn Gly Val Arg Glu Gly Ala Phe Gly Leu Leu Leu Asn  
 485 490 495  
 Ser Val Val Leu Gly Ile Gly Ser Phe Leu Val Asp Pro Leu Cys Arg  
 500 505 510  
 Leu Met Gly Ala Arg Leu Val Trp Ala Ile Ser Asn Phe Thr Val Phe  
 515 520 525  
 Ile Cys Met Leu Ala Thr Ala Ile Leu Ser Trp Ile Ser Phe Asp Leu  
 530 535 540  
 Tyr Ser Ser Lys Leu His His Ile Ile Gly Ala Asn Lys Thr Val Lys  
 545 550 555 560  
 Asn Ser Ala Leu Ile Val Phe Ser Leu Leu Gly Leu Pro Leu Ser Ile  
 565 570 575  
 Thr Tyr Ser Val Pro Phe Ser Val Thr Ala Glu Leu Thr Ala Gly Thr  
 580 585 590  
 Gly Gly Gly Gln Gly Leu Ala Thr Gly Val Leu Asn Leu Ala Ile Val  
 595 600 605  
 Val Pro Gln Ile Val Val Ser Leu Gly Ala Gly Pro Trp Asp Ala Leu  
 610 615 620  
 Phe Gly Gly Gly Asn Val Pro Ala Phe Ala Leu Ala Ser Val Phe Ser  
 625 630 635 640  
 Leu Gly Ala Gly Val Leu Ala Val Leu Lys Leu Pro Lys Leu Pro Asn  
 645 650 655  
 Ser Tyr Arg Ser Ala Gly Phe His Gly Phe Gly  
 660 665

<210> 11  
 <211> 1885  
 <212> DNA  
 <213> Glycine max

<400> 11  
 gcacgaggag agaaagagaa aacatttataa aaaatataaa aaaaaataaa cctctttctc 60  
 tctctgaatt tctaagcctc tctcaaaata atggaggagc cacaaccagg acccagcccg 120  
 ttacgcaaaa tgattttggt gtcgtcaatg gcggccggtg tccaattcgg gtgggacctc 180  
 cagctctccc ttctcacccc atatgttcaa accctaggcg tcccgcacgc ttgggcctca 240

```

tttattttggc tatgtggccc gatatctggg ctgctgggtgc agcccattgt ggggtacagc 300
agcgaccgat gccaatcccc tttcgggtcgt cgccgtccct ttatcctagc cgggtctttg 360
gccgtcgcca ttgctgtggt cctaattggt tacgcggccg atataggaca cgcggcaggc 420
gacaacctga cccaaaagac tcggccacgt gcagtggcga tcttcgtgat cgggttttgg 480
atcctcgacg tggctaacaa catgctccag ggtccatgcc gtgcctttct gggcgacctc 540
gctgccgggg atgagaaaaa gacaaaggca gccaatgcct tcttctcttt cttcatggcc 600
gtcggcaaca tcttgggcta tgctgcggga tcctacgacg gcctccaccg cctcttcccc 660
ttcacgaaa ccgaggcatg caacgtcttc tgcgcaaacc tcaagagttg cttcttcttc 720
gctatcgtec tcttgggtgt cctcaccacc ttggtgctga ttaccgtgaa agaaaactccc 780
tacacgcaa aggcagagaa ggaaaccgaa gatgcagaga agacacactt ctctgtcttc 840
tgcggaagaa tttgtcttgc attcaagggg ctgaagaggc caatgtggat gttgatgttg 900
gtgaccgccc tgaactggat agcgtggttc cttacttct tgttcgacac cgattggatg 960
ggtcgtgagg tgtacggtgg tgacgtgggg cagaaggcgt acgattcggg agttcatgca 1020
ggttctctag ggctaattgt gaatgcggtg gtgttggtg tgatgtcatt ggcaattgaa 1080
ccgttggggc gtgtggttgg gggaatcaag tggttgtggg gaatcgtaa catcttgttg 1140
gctatatgct tgggaatgac cgttctcatc acaaagatcg ctgagcatga acgtcttctt 1200
aacctgctt tgggttgggaa cccttccctc ggtatcaaag ttggttccat ggttttcttc 1260
tctgtccttg gaatccctct tgcgattact ttcagtgtcc catttgctct agcatctata 1320
tactccagca cttccggagc aggccaaggt ctatctttgg gtgtccttaa tattgcaatt 1380
gtcgttccac agatgatagt atcaaccata agtggacctt gggatgcctt gttcggcggt 1440
ggaaacttgc ctgcattcgt gttgggtgcg gtggccgccc tcgtgagtg aatattagca 1500
gttcttctgc tgccaactcc aaagaaagct gatgaggtca gggcttctag cctcaacatg 1560
ggaagtttgc attagtgtgt ctattatagg gctttacatg tttcactttc aaccttgctt 1620
tgatatggga aaaagaactt agtctttaga ttcgaagtgg gtgtgtgcat gtgtatatta 1680
ggtattagac atgggtttta gatgcttcca tagccacttt atgtccaagg acaatcatta 1740
atgtgtaaac tttggtgcga caattatacc gaatagaaaa tcattaaaca tacatctttt 1800
tatttcacac attaaaaaaa tatcataata aatatatata ttatcatatt ataaaagaaa 1860
tatttgaaaa aaaaaaaaaa aaaaaa 1885

```

<210> 12  
 <211> 494  
 <212> PRT  
 <213> Glycine max

```

<400> 12
Met Glu Glu Pro Gln Pro Gly Pro Ser Pro Leu Arg Lys Met Ile Leu
  1              5              10              15

Val Ser Ser Met Ala Ala Gly Ile Gln Phe Gly Trp Ala Leu Gln Leu
      20              25              30

Ser Leu Leu Thr Pro Tyr Val Gln Thr Leu Gly Val Pro His Ala Trp
  35              40              45

Ala Ser Phe Ile Trp Leu Cys Gly Pro Ile Ser Gly Leu Leu Val Gln
  50              55              60

Pro Ile Val Gly Tyr Ser Ser Asp Arg Cys Gln Ser Arg Phe Gly Arg
  65              70              75              80

Arg Arg Pro Phe Ile Leu Ala Gly Ser Leu Ala Val Ala Ile Ala Val
      85              90              95

Phe Leu Ile Gly Tyr Ala Ala Asp Ile Gly His Ala Ala Gly Asp Asn
 100              105              110

Leu Thr Gln Lys Thr Arg Pro Arg Ala Val Ala Ile Phe Val Ile Gly
 115              120              125

Phe Trp Ile Leu Asp Val Ala Asn Asn Met Leu Gln Gly Pro Cys Arg
 130              135              140

```

Ala	Phe	Leu	Gly	Asp	Leu	Ala	Ala	Gly	Asp	Glu	Lys	Lys	Thr	Lys	Ala	145	150	155	160
Ala	Asn	Ala	Phe	Phe	Ser	Phe	Phe	Met	Ala	Val	Gly	Asn	Ile	Leu	Gly		165	170	175
Tyr	Ala	Ala	Gly	Ser	Tyr	Asp	Gly	Leu	His	Arg	Leu	Phe	Pro	Phe	Thr	180	185	190	
Glu	Thr	Glu	Ala	Cys	Asn	Val	Phe	Cys	Ala	Asn	Leu	Lys	Ser	Cys	Phe	195	200	205	
Phe	Phe	Ala	Ile	Val	Leu	Leu	Val	Val	Leu	Thr	Thr	Leu	Val	Leu	Ile	210	215	220	
Thr	Val	Lys	Glu	Thr	Pro	Tyr	Thr	Pro	Lys	Ala	Glu	Lys	Glu	Thr	Glu	225	230	235	240
Asp	Ala	Glu	Lys	Thr	His	Phe	Ser	Cys	Phe	Cys	Gly	Glu	Leu	Cys	Leu	245	250	255	
Ala	Phe	Lys	Gly	Leu	Lys	Arg	Pro	Met	Trp	Met	Leu	Met	Leu	Val	Thr	260	265	270	
Ala	Val	Asn	Trp	Ile	Ala	Trp	Phe	Pro	Tyr	Phe	Leu	Phe	Asp	Thr	Asp	275	280	285	
Trp	Met	Gly	Arg	Glu	Val	Tyr	Gly	Gly	Asp	Val	Gly	Gln	Lys	Ala	Tyr	290	295	300	
Asp	Ser	Gly	Val	His	Ala	Gly	Ser	Leu	Gly	Leu	Met	Leu	Asn	Ala	Val	305	310	315	320
Val	Leu	Ala	Val	Met	Ser	Leu	Ala	Ile	Glu	Pro	Leu	Gly	Arg	Val	Val	325	330	335	
Gly	Gly	Ile	Lys	Trp	Leu	Trp	Gly	Ile	Val	Asn	Ile	Leu	Leu	Ala	Ile	340	345	350	
Cys	Leu	Gly	Met	Thr	Val	Leu	Ile	Thr	Lys	Ile	Ala	Glu	His	Glu	Arg	355	360	365	
Leu	Leu	Asn	Pro	Ala	Leu	Val	Gly	Asn	Pro	Ser	Leu	Gly	Ile	Lys	Val	370	375	380	
Gly	Ser	Met	Val	Phe	Phe	Ser	Val	Leu	Gly	Ile	Pro	Leu	Ala	Ile	Thr	385	390	395	400
Phe	Ser	Val	Pro	Phe	Ala	Leu	Ala	Ser	Ile	Tyr	Ser	Ser	Thr	Ser	Gly	405	410	415	
Ala	Gly	Gln	Gly	Leu	Ser	Leu	Gly	Val	Leu	Asn	Ile	Ala	Ile	Val	Val	420	425	430	
Pro	Gln	Met	Ile	Val	Ser	Thr	Ile	Ser	Gly	Pro	Trp	Asp	Ala	Leu	Phe	435	440	445	
Gly	Gly	Gly	Asn	Leu	Pro	Ala	Phe	Val	Leu	Gly	Ala	Val	Ala	Ala	Val	450	455	460	

Val Ser Ala Ile Leu Ala Val Leu Leu Leu Pro Thr Pro Lys Lys Ala  
465 470 475 480

Asp Glu Val Arg Ala Ser Ser Leu Asn Met Gly Ser Leu His  
485 490

<210> 13  
<211> 1041  
<212> DNA  
<213> Glycine max

<220>  
<221> unsure  
<222> (1007)  
<223> n=a,c,g or t

<400> 13  
gcacgagctc acactctctc tttcttttctt cctgctgcta caatatggag cctctctctt 60  
ccaccaaaaca caacaacaat ctctccaagc ctctctccct ccacacggag gctccgccgc 120  
cggaggccag tccccccgg aagatcatgg tgggtggcctc catcgccgcc ggggtgcaat 180  
tcgggtgggc cctacagctc tctctactta ccccttacgt ccaactgctg gggattcccc 240  
acacttgggc cgccttcac tggctctgcg gcccaatctc cggcatgctc gtccagccca 300  
tcgtgggata ccacagcgac cgctgcacct cccgcttcgg ccgccgccgc cccttcacg 360  
ccgccggctc cctcgccgtc gccatcgccg tcttccttat cggctacgcc gccgacctcg 420  
gccacatgtt cggcgactcc ctagccaaaa aaaccgcccc gcgccatcgc atcttcggtg 480  
tcggcttctg gattctcgac gtcgcaaaca acatgctaca agggccctgc cgcgccctcc 540  
tgggcgacct ctgcgccgga gaacaacgga aaacgcgaaa cgcaaacgcc ttcttctcct 600  
tcttcattggc cgctcggaac gtctgggct acgccgcggg ctcttacagc ggccctccaca 660  
acgtcttccc tttcactaaa acaaaaagcat gtgatgttta ctgcgcgaat ttgaagagtt 720  
gtttcttctc ctccatcgcg cttcttctca ctctctccac aatcgcttg acctacgtga 780  
aggagaaaac ggtgtcgtca gagaaaacgg tgaggagttc ggtggaggag gatgggtccc 840  
acgggggcat gccgtgcttc gggcaattat tcggtgcgtt ccgcgaactg aagcgtccca 900  
tgtggatcct tctgttggtg acgtgtctga actgggattg cctgggtcct tttttgctat 960  
tcgacaccga ctgggattgg ggcgtgaggt gtacggaggg aaaattnggg gaaaggaaaag 1020  
ggtacgataa ggggttccgt t 1041

<210> 14  
<211> 322  
<212> PRT  
<213> Glycine max

<220>  
<221> UNSURE  
<222> (311)  
<223> Xaa = ANY AMINO ACID

<220>  
<221> UNSURE  
<222> (321)  
<223> Xaa = ANY AMINO ACID

<400> 14  
Met Glu Pro Leu Ser Ser Thr Lys His Asn Asn Asn Leu Ser Lys Pro  
1 5 10 15

Ser Ser Leu His Thr Glu Ala Pro Pro Pro Glu Ala Ser Pro Leu Arg  
20 25 30

Lys Ile Met Val Val Ala Ser Ile Ala Ala Gly Val Gln Phe Gly Trp

35					40					45					
Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val	Gln	Leu	Leu	Gly	Ile
50						55					60				
Pro	His	Thr	Trp	Ala	Ala	Phe	Ile	Trp	Leu	Cys	Gly	Pro	Ile	Ser	Gly
65				70					75						80
Met	Leu	Val	Gln	Pro	Ile	Val	Gly	Tyr	His	Ser	Asp	Arg	Cys	Thr	Ser
				85					90					95	
Arg	Phe	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Ala	Ala	Gly	Ser	Leu	Ala	Val
			100					105					110		
Ala	Ile	Ala	Val	Phe	Leu	Ile	Gly	Tyr	Ala	Ala	Asp	Leu	Gly	His	Met
	115						120					125			
Phe	Gly	Asp	Ser	Leu	Ala	Lys	Lys	Thr	Ala	Pro	Arg	His	Arg	Ile	Phe
	130					135					140				
Val	Val	Gly	Phe	Trp	Ile	Leu	Asp	Val	Ala	Asn	Asn	Met	Leu	Gln	Gly
145					150					155					160
Pro	Cys	Arg	Ala	Leu	Leu	Gly	Asp	Leu	Cys	Ala	Gly	Glu	Gln	Arg	Lys
				165					170					175	
Thr	Arg	Asn	Ala	Asn	Ala	Phe	Phe	Ser	Phe	Phe	Met	Ala	Val	Gly	Asn
			180					185					190		
Val	Leu	Gly	Tyr	Ala	Ala	Gly	Ser	Tyr	Ser	Gly	Leu	His	Asn	Val	Phe
		195					200					205			
Pro	Phe	Thr	Lys	Thr	Lys	Ala	Cys	Asp	Val	Tyr	Cys	Ala	Asn	Leu	Lys
	210					215					220				
Ser	Cys	Phe	Phe	Leu	Ser	Ile	Ala	Leu	Leu	Leu	Thr	Leu	Ser	Thr	Ile
225				230							235				240
Ala	Leu	Thr	Tyr	Val	Lys	Glu	Lys	Thr	Val	Ser	Ser	Glu	Lys	Thr	Val
				245					250					255	
Arg	Ser	Ser	Val	Glu	Glu	Asp	Gly	Ser	His	Gly	Gly	Met	Pro	Cys	Phe
			260					265					270		
Gly	Gln	Leu	Phe	Gly	Ala	Phe	Arg	Glu	Leu	Lys	Arg	Pro	Met	Trp	Ile
		275					280					285			
Leu	Leu	Leu	Val	Thr	Cys	Leu	Asn	Trp	Asp	Cys	Leu	Val	Pro	Phe	Leu
		290				295					300				
Leu	Phe	Asp	Thr	Asp	Trp	Xaa	Gly	Arg	Glu	Val	Tyr	Gly	Gly	Lys	Ile
305					310					315					320
Xaa Gly															

<210> 15  
 <211> 578  
 <212> DNA  
 <213> *Vernonia mespilifolia*

<400> 15  
gcacgaggtt ggcttggcgg tgtgaaacgg ttatggggtg gcatcaattt ccttctagct 60  
gtttgtttgg ccatgacggt ggtggtgacc aaaatggcag actctgaacg acagtttaag 120  
acgttgcccg acggtagcaa aaccgcgttg ccaccaggcg gcgacattaa agccggtgct 180  
ttgtcaattt ttgccgtcct cggtgcccca ctagctgtga ctttcagtgt tccatgtgct 240  
cttgcaccaa tattttctaa cagttcagga gctggacaag gtctatcact tgggtgtttg 300  
aatctagcaa tcgtcatacc acagatgttc gtatcagtac taagtggacc atgggacgca 360  
ctgttcggcg gtggaaactt accagcattt gtggttgag caatttcggc tgcagtaagt 420  
gggatattat cgttcaccat gcttccttcg ccacccccag atgtcgtact ttcaaagggt 480  
tccggaggtg ggatgcatta gagagtaaata aactgccact caacacgtcc cgattgtgtc 540  
agattgggac atttaggacc aaaaaaaaaa aaaaaaaaaa 578

<210> 16  
<211> 166  
<212> PRT  
<213> Vernonia mespilifolia

<400> 16  
Ala Arg Gly Trp Leu Gly Gly Val Lys Arg Leu Trp Gly Gly Ile Asn  
1 5 10 15  
Phe Leu Leu Ala Val Cys Leu Ala Met Thr Val Val Val Thr Lys Met  
20 25 30  
Ala Asp Ser Glu Arg Gln Phe Lys Thr Leu Pro Asp Gly Ser Lys Thr  
35 40 45  
Ala Leu Pro Pro Gly Gly Asp Ile Lys Ala Gly Ala Leu Ser Ile Phe  
50 55 60  
Ala Val Leu Gly Ala Pro Leu Ala Val Thr Phe Ser Val Pro Cys Ala  
65 70 75 80  
Leu Ala Ser Ile Phe Ser Asn Ser Ser Gly Ala Gly Gln Gly Leu Ser  
85 90 95  
Leu Gly Val Leu Asn Leu Ala Ile Val Ile Pro Gln Met Phe Val Ser  
100 105 110  
Val Leu Ser Gly Pro Trp Asp Ala Leu Phe Gly Gly Gly Asn Leu Pro  
115 120 125  
Ala Phe Val Val Gly Ala Ile Ser Ala Ala Val Ser Gly Ile Leu Ser  
130 135 140  
Phe Thr Met Leu Pro Ser Pro Pro Pro Asp Val Val Leu Ser Lys Val  
145 150 155 160  
Ser Gly Gly Gly Met His  
165

<210> 17  
<211> 1062  
<212> DNA  
<213> Triticum aestivum

<400> 17  
ctggaatgcc gtcagtgctc ctgcgcaccg gcctcacctg gctgtcctgg ttccccttca 60  
tcctgtacga caccgactgg atgggctcgt agatctacca cggtagaccc aagggaaacc 120  
ccgacgaggc caacgcgttc caggcaggtg tcagggcccg ggcgttcggc ctgctactca 180  
actcggctcgt cctgggggttc agctcgttcc tgatcgagcc gctgtgcaag aggctaggcc 240



```

cgcgggtggt gtgggtgtca agcaacttcc tcgtctgcat ctccatggcc gccatttgca 300
tcataagctg gtggggccact caggacctgc atgggtacat ccagcacgcc atcaccgcca 360
gcaaggagat caagatcgtc tccctcgccc tcttcgcctt cctcggaatc cctctcgcca 420
ttctgtacag tgtccctttc gcggtgacgg cgcagctggc ggcgaaacaga ggcggtggcc 480
aagggtgtg cacgggctgt ctgaacatcg ccatcgatg atccccaggtg atcatcgcg 540
tgggggcggg gccgtgggac gagctgttcg gcaagggcaa catcccggcg ttcggcggtg 600
cgtccgcctt cgcgctcatc ggcgcatcg tcggcatatt cctgctgccc aagatctcca 660
ggcgccagtt ccggggccgtc agcggcgggc gtcactgacc gcgccgcgcg ccggtcgggc 720
tgagcatggc gaaggccgat cgcgccggcc cgaaggtccc agcccagctc ggcatattacc 780
aaattttcgc ataggcgtaa ctagggggct ctcgcctaag gactccgtag agcagaataa 840
gaattgtgag gaacctgtat gtgttgtgtc tgtatgtgcg tgtaagtcag tgcgtgtagc 900
ggaaaatgga cagaggaatg cgggcatcca tcgccggctg ggggtgtcgtc ttggggtgt 960
gacttgtgtg tagcaaacca aggtgatcaa gtgaggggaa aagaatggat gatgaacttt 1020
cagcgacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1062

```

```

<210> 18
<211> 232
<212> PRT
<213> Triticum aestivum

```

```

<400> 18
Ala Gly Met Pro Ser Val Leu Leu Val Thr Gly Leu Thr Trp Leu Ser
  1              5              10              15

Trp Phe Pro Phe Ile Leu Tyr Asp Thr Asp Trp Met Gly Arg Glu Ile
      20              25              30

Tyr His Gly Asp Pro Lys Gly Thr Pro Asp Glu Ala Asn Ala Phe Gln
      35              40              45

Ala Gly Val Arg Ala Gly Ala Phe Gly Leu Leu Leu Asn Ser Val Val
  50              55              60

Leu Gly Phe Ser Ser Phe Leu Ile Glu Pro Leu Cys Lys Arg Leu Gly
  65              70              75              80

Pro Arg Val Val Trp Val Ser Ser Asn Phe Leu Val Cys Ile Ser Met
      85              90              95

Ala Ala Ile Cys Ile Ile Ser Trp Trp Ala Thr Gln Asp Leu His Gly
      100              105              110

Tyr Ile Gln His Ala Ile Thr Ala Ser Lys Glu Ile Lys Ile Val Ser
      115              120              125

Leu Ala Leu Phe Ala Phe Leu Gly Ile Pro Leu Ala Ile Leu Tyr Ser
      130              135              140

Val Pro Phe Ala Val Thr Ala Gln Leu Ala Ala Asn Arg Gly Gly Gly
      145              150              155              160

Gln Gly Leu Cys Thr Gly Val Leu Asn Ile Ala Ile Val Ile Pro Gln
      165              170              175

Val Ile Ile Ala Val Gly Ala Gly Pro Trp Asp Glu Leu Phe Gly Lys
      180              185              190

Gly Asn Ile Pro Ala Phe Gly Val Ala Ser Ala Phe Ala Leu Ile Gly
      195              200              205

Gly Ile Val Gly Ile Phe Leu Leu Pro Lys Ile Ser Arg Arg Gln Phe

```

210

215

220

Arg Ala Val Ser Gly Gly Gly His  
225 230

<210> 19  
<211> 2083  
<212> DNA  
<213> Triticum aestivum

<220>  
<221> UNSURE  
<222> (1093)  
<223> n=a,c,g or t

<400> 19  
gcacgagcac accacaccac acctctctct ctctcactcg cactttccgc tctcgtctcc 60  
tcctcttccct cctcccgtca gacccttctt ccccggcgtt gatccgatca acgtccctcc 120  
ccgtcctgcc cctagatcct tggccgggca gggatacgcc gtagaattga taggcgaacg 180  
gacgaggtgg tgatcgccag ggcggcctct ctgccatggc gcgcggcgga ggcaacggcg 240  
aggtggagct ctcggtcggg gtccggcgcg gaggcgcgcg cgcgcgcggc ggggggggagc 300  
aaccgcgcgt ggacatcagc ctccggcagac tcctcctcgc cggcatggtc gccggcgggcg 360  
tgcagtacgg atgggcgctc cagctctccc tgctcaccce ctacgtccag actctgggac 420  
tttcgcatgc tctgacttca ttcattgtggc tctgcggccc tattgctgga ttagtggttc 480  
aaccatgcgt tgggctctac agtgacaagt gcacatctag atggggaaga cgcagaccgt 540  
ttattctgac aggatgcata ctcatctgca ttgctgttgt ggtcgtcggc ttctcggctg 600  
acattggagc tgggtctgggt gacagcaagg aagagtgcag tctctatcat gggcctcgtt 660  
ggcacgctgc aattgtgtat gttcttggat tctggctcct tgacttctcc aacaacactg 720  
tgcaagggtcc agcgcgtgct ctgatggctg atttatcagc tcagcatgga cccagtgcag 780  
caaattcaat cttctgttct tggatggcgc taggaaatat ccttggatac tcctctggtt 840  
ccacaaacaa ctggcacaag tggtttccgt tcctccggac aagggtctgc tgtgaagcct 900  
gcgcaaactc gaaaggcgca tttctggtgg cagtgttgtt cctggccttc tgtttggtga 960  
taactgtgat ctccgccaag gagataccgt acaaggcgat tgcgcccctc ccaacaaagg 1020  
gcaatggcca ggttgaagtc gagcccaccg ggcgcgtcgc cgtgttcaaa ggcttcaaga 1080  
acttgcctcc tgnaatgccg tccgtgctcc tcgtcactgg cctcacctgg ctgtcctggt 1140  
tcccccttcat cctgtacgac accgactgga tgggtcgtga gatctaccac ggtgacccca 1200  
agggaaacccc cgacgaggcc aacgcgttcc aggaggtgt cagggcgggg gcgttcggcc 1260  
tgctactcaa ctccgtcgtc ctgggggttca gctcgttccct gatcgagccg ctgtgcaaga 1320  
ggctaggccc gcgggtggtg tgggtgtcga gcaacttccct cgtctgcctc tccatggccg 1380  
cgatttgcac cataagctgg tgggtactc aggacttgca tgggtatata cagcacgcca 1440  
tcaccgccag caaggagatc aagatcgtct ccctcgccct ctccgccttc ctccgaatcc 1500  
ctctcgccat tctgtacagt gtccctttcg cggtagcggc gcagctggcg gcgaagagag 1560  
gcgggtggcca agggctgtgc accggcggtgc tcaacatcgc catcgtgata cccaggtga 1620  
tcctcgcggg gggggcgggg ccgtgggacg agctgttcgg caagggcaac atcccgcggt 1680  
tcggcatggc ctccgccttc gcgctcatcg gcggcatcgt cggcatattc ctgctgcca 1740  
agatctccag gcgccagttc cgggccgtca gcggcgcgcg tccactgagca tggccaaggc 1800  
cggaggtccc agcccagccc gccatttacc aaattttcgc ataggcgtaa ctagggtggt 1860  
ctcgcctaag gactccgtag agcagaataa gaattgtgag gaacctgtat gtgttgtgtc 1920  
tgtatgtgcg tgtaagtcag tgcgtgtagc ggaaaatgga cagaggaatg tgggcatcca 1980  
tcaccggctg ggggtgtcgtc tttgggttgt gacttgtgtg tagcaaacca aggtgatcaa 2040  
gtgaggggaa atgaatggat gatgaacttt cagcgacaaa aaa 2083

<210> 20  
<211> 522  
<212> PRT  
<213> Triticum aestivum

<400> 20  
Met Ala Arg Gly Gly Gly Asn Gly Glu Val Glu Leu Ser Val Gly Val  
1 5 10 15

Gly	Gly	Gly	Gly	Gly	Gly	Ala	Ala	Gly	Gly	Gly	Glu	Gln	Pro	Ala	Val	20	25	30
Asp	Ile	Ser	Leu	Gly	Arg	Leu	Ile	Leu	Ala	Gly	Met	Val	Ala	Gly	Gly	35	40	45
Val	Gln	Tyr	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val	50	55	60
Gln	Thr	Leu	Gly	Leu	Ser	His	Ala	Leu	Thr	Ser	Phe	Met	Trp	Leu	Cys	65	70	75
Gly	Pro	Ile	Ala	Gly	Leu	Val	Val	Gln	Pro	Cys	Val	Gly	Leu	Tyr	Ser	85	90	95
Asp	Lys	Cys	Thr	Ser	Arg	Trp	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Leu	Thr	100	105	110
Gly	Cys	Ile	Leu	Ile	Cys	Ile	Ala	Val	Val	Val	Val	Gly	Phe	Ser	Ala	115	120	125
Asp	Ile	Gly	Ala	Gly	Leu	Gly	Asp	Ser	Lys	Glu	Glu	Cys	Ser	Leu	Tyr	130	135	140
His	Gly	Pro	Arg	Trp	His	Ala	Ala	Ile	Val	Tyr	Val	Leu	Gly	Phe	Trp	145	150	155
Leu	Leu	Asp	Phe	Ser	Asn	Asn	Thr	Val	Gln	Gly	Pro	Ala	Arg	Ala	Leu	165	170	175
Met	Ala	Asp	Leu	Ser	Ala	Gln	His	Gly	Pro	Ser	Ala	Ala	Asn	Ser	Ile	180	185	190
Phe	Cys	Ser	Trp	Met	Ala	Leu	Gly	Asn	Ile	Leu	Gly	Tyr	Ser	Ser	Gly	195	200	205
Ser	Thr	Asn	Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Arg	Thr	Arg	Ala	210	215	220
Cys	Cys	Glu	Ala	Cys	Ala	Asn	Leu	Lys	Gly	Ala	Phe	Leu	Val	Ala	Val	225	230	235
Leu	Val	Leu	Ala	Phe	Cys	Leu	Val	Ile	Thr	Val	Ile	Phe	Ala	Lys	Glu	245	250	255
Ile	Pro	Tyr	Lys	Ala	Ile	Ala	Pro	Leu	Pro	Thr	Lys	Gly	Asn	Gly	Gln	260	265	270
Val	Glu	Val	Glu	Pro	Thr	Gly	Pro	Leu	Ala	Val	Phe	Lys	Gly	Phe	Lys	275	280	285
Asn	Leu	Pro	Pro	Met	Pro	Ser	Val	Leu	Leu	Val	Thr	Gly	Leu	Thr	Trp	290	295	300
Leu	Ser	Trp	Phe	Pro	Phe	Ile	Leu	Tyr	Asp	Thr	Asp	Trp	Met	Gly	Arg	305	310	315
Glu	Ile	Tyr	His	Gly	Asp	Pro	Lys	Gly	Thr	Pro	Asp	Glu	Ala	Asn	Ala	325	330	335
Phe	Gln	Ala	Gly	Val	Arg	Ala	Gly	Ala	Phe	Gly	Leu	Leu	Leu	Asn	Ser			

340	345	350
Val Val Leu Gly Phe Ser Ser Phe Leu Ile Glu Pro Leu Cys Lys Arg		
355	360	365
Leu Gly Pro Arg Val Val Trp Val Ser Ser Asn Phe Leu Val Cys Leu		
370	375	380
Ser Met Ala Ala Ile Cys Ile Ile Ser Trp Trp Ala Thr Gln Asp Leu		
385	390	395
His Gly Tyr Ile Gln His Ala Ile Thr Ala Ser Lys Glu Ile Lys Ile		
405	410	415
Val Ser Leu Ala Leu Phe Ala Phe Leu Gly Ile Pro Leu Ala Ile Leu		
420	425	430
Tyr Ser Val Pro Phe Ala Val Thr Ala Gln Leu Ala Ala Lys Arg Gly		
435	440	445
Gly Gly Gln Gly Leu Cys Thr Gly Val Leu Asn Ile Ala Ile Val Ile		
450	455	460
Pro Gln Val Ile Ile Ala Val Gly Ala Gly Pro Trp Asp Glu Leu Phe		
465	470	475
Gly Lys Gly Asn Ile Pro Ala Phe Gly Met Ala Ser Ala Phe Ala Leu		
485	490	495
Ile Gly Gly Ile Val Gly Ile Phe Leu Leu Pro Lys Ile Ser Arg Arg		
500	505	510
Gln Phe Arg Ala Val Ser Gly Gly Gly His		
515	520	

<210> 21  
 <211> 2160  
 <212> DNA  
 <213> Triticum aestivum

<400> 21  
 gcacgagacc acccctctct ctctctctca ctgcgcgttt ccgctctcgt ctcctcctct 60  
 tcctcctccc gtcagccctt tcttccccgg cgttgatccg atcgacgtcc tccctcctcc 120  
 ccggcggttg tccgacgcgc cgtagagttg ataggcgaac gaacggggcg gtgatcgtcc 180  
 gggcgggccc cctgcgacga tggcgcgcgg cggcggaac ggcgaggtgg agctctcggg 240  
 gggggctcgg ggaggcgggc ccggcgccgg cggggcggaac gcccccgccg tggacatcag 300  
 cctcggcagg ctcatcctcg ccggcatggt cgccggcggc gtgcagtacg gatgggcgct 360  
 ccagctctcc ctgctcacc cctacgtcca gactctggga ctttcgcatg ctctgacttc 420  
 attcatgtgg ctctgcggcc ctattgctgg attagtgtt caaccatgcg ttgggctcta 480  
 cagtgacaag tgcacttcaa gatggggaag acgcagaccg ttcattctga caggatgtat 540  
 cctcatctgc attgctgtcg tggtcgctcg cttctcggct gacattggag ctgctctggg 600  
 tgacagcaag gaagagtga gtctctatca tgggcctcgt tggcacgctg caattgtgta 660  
 tgttcttgga ttctggctcc ttgacttctc caacaacaca gtgcaaggac cagcgcggtgc 720  
 tctgatggct gatttatcag ccagcatgg acccagtga gcaaattcaa tcttctgttc 780  
 ttggatggca ctgggaaata tcctaggata ctcatctggt tccacaaata actggcacia 840  
 gtgggtttccg ttctcccgga caagggttg ctgtgaagcc tgcgcaaata tgaaaggcgc 900  
 atttctggtg gcagtgtgt tcctggcctt ctggttggtg ataaccgtga tcttcgccaa 960  
 ggagataacc tacaaggcga ttgcgcccct cccaacaaag gccaatggcc aggttgaagt 1020  
 cgagcccacc gggcgctcg ccgtcttcaa aggttcaag aacttgccct ctggaatgcc 1080  
 gtcagtgtc ctgctcacc gctcacctg gctgtcctgg ttccccttca tctgtacga 1140  
 caccgactgg atgggtcgtg agatctacca cgtgacccc aagggaaccc ccgacgaggc 1200

```

caacgcgttc caggcaggtg tcagggccgg ggcgttcggc ctgctactca actcggtcgt 1260
cctgggggttc agctcgttcc tgatcgagcc gctgtgcaag aggctaggcc cgcgggtggt 1320
gtgggtgtca agcaacttcc tcgtctgcct ctccatggcc gccatttgca tcataagctg 1380
gtgggccact caggacctgc atgggtacat ccagcacgcc atcacgcgca gcaaggagat 1440
caagatcgtc tccctcgccc tcttcgcctt cctcggaatc cctctcgcca ttctgtacag 1500
tgtcactttc gccgtgacgg cgcagctggc ggcgaacaga tgcggtgggc aatggctgtg 1560
cacgggcggtg ctgaacatcg ccatcgcgat accccaggtg atcatcgcg tgggggcggg 1620
gccgtgggac gagctgttcg gcaagggcaa catcccggcg ttcggcggtg cgtccgcctt 1680
cgcgctcadc ggcggcacatg tcggcatatt cctgctgccc aagatctcca ggctccagtt 1740
ccgggcccgtc agcggcgggc gtcactgacc gcgcgcgcgc cgggtcggcc tgagcatggc 1800
gaaggccgat cgcgccggcc cgaagggtccc agcccagctc ggcatttacc aaattttcgc 1860
ataggcgtaa ctagggggct ctcgccctaag gactccgtag agcagaataa gaattgtgag 1920
gaacctgtat gtgttgtgtc tgtatgtgcy tgtaagtcag tgcgtgtagc ggaaaatgga 1980
cagaggaatg cgggcaccca tcgccggctg ggggtgctgc tttgggttgt gacttgtgtg 2040
tagcaaacca aggtgatcaa gtgaggggaa aagaatggat gatgaacttt cagcgacaaa 2100
aaaaaaaaaa aaaaaaaaaa aaaaaataaa aaaaaaaaaa aagaaaaaaa taaaaaaaaa 2160

```

<210> 22

<211> 522

<212> PRT

<213> Triticum aestivum

<400> 22

```

Met Ala Arg Gly Gly Gly Asn Gly Glu Val Glu Leu Ser Val Gly Val
  1              5              10              15

Gly Gly Gly Gly Ala Gly Ala Gly Gly Ala Asp Ala Pro Ala Val Asp
      20              25              30

Ile Ser Leu Gly Arg Leu Ile Leu Ala Gly Met Val Ala Gly Gly Val
      35              40              45

Gln Tyr Gly Trp Ala Leu Gln Leu Ser Leu Leu Thr Pro Tyr Val Gln
      50              55              60

Thr Leu Gly Leu Ser His Ala Leu Thr Ser Phe Met Trp Leu Cys Gly
      65              70              75              80

Pro Ile Ala Gly Leu Val Val Gln Pro Cys Val Gly Leu Tyr Ser Asp
      85              90              95

Lys Cys Thr Ser Arg Trp Gly Arg Arg Arg Pro Phe Ile Leu Thr Gly
      100              105              110

Cys Ile Leu Ile Cys Ile Ala Val Val Val Val Gly Phe Ser Ala Asp
      115              120              125

Ile Gly Ala Ala Leu Gly Asp Ser Lys Glu Glu Cys Ser Leu Tyr His
      130              135              140

Gly Pro Arg Trp His Ala Ala Ile Val Tyr Val Leu Gly Phe Trp Leu
      145              150              155              160

Leu Asp Phe Ser Asn Asn Thr Val Gln Gly Pro Ala Arg Ala Leu Met
      165              170              175

Ala Asp Leu Ser Ala Gln His Gly Pro Ser Ala Ala Asn Ser Ile Phe
      180              185              190

Cys Ser Trp Met Ala Leu Gly Asn Ile Leu Gly Tyr Ser Ser Gly Ser
      195              200              205

```

Thr	Asn	Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Arg	Thr	Arg	Ala	Cys
210						215					220				
Cys	Glu	Ala	Cys	Ala	Asn	Leu	Lys	Gly	Ala	Phe	Leu	Val	Ala	Val	Leu
225					230					235					240
Phe	Leu	Ala	Phe	Cys	Leu	Val	Ile	Thr	Val	Ile	Phe	Ala	Lys	Glu	Ile
				245					250					255	
Pro	Tyr	Lys	Ala	Ile	Ala	Pro	Leu	Pro	Thr	Lys	Ala	Asn	Gly	Gln	Val
			260					265					270		
Glu	Val	Glu	Pro	Thr	Gly	Pro	Leu	Ala	Val	Phe	Lys	Gly	Phe	Lys	Asn
		275					280					285			
Leu	Pro	Pro	Gly	Met	Pro	Ser	Val	Leu	Leu	Val	Thr	Gly	Leu	Thr	Trp
	290					295					300				
Leu	Ser	Trp	Phe	Pro	Phe	Ile	Leu	Tyr	Asp	Thr	Asp	Trp	Met	Gly	Arg
305					310					315					320
Glu	Ile	Tyr	His	Gly	Asp	Pro	Lys	Gly	Thr	Pro	Asp	Glu	Ala	Asn	Ala
				325					330					335	
Phe	Gln	Ala	Gly	Val	Arg	Ala	Gly	Ala	Phe	Gly	Leu	Leu	Leu	Asn	Ser
			340					345					350		
Val	Val	Leu	Gly	Phe	Ser	Ser	Phe	Leu	Ile	Glu	Pro	Leu	Cys	Lys	Arg
		355					360					365			
Leu	Gly	Pro	Arg	Val	Val	Trp	Val	Ser	Ser	Asn	Phe	Leu	Val	Cys	Leu
	370					375					380				
Ser	Met	Ala	Ala	Ile	Cys	Ile	Ile	Ser	Trp	Trp	Ala	Thr	Gln	Asp	Leu
385					390					395					400
His	Gly	Tyr	Ile	Gln	His	Ala	Ile	Thr	Ala	Ser	Lys	Glu	Ile	Lys	Ile
				405					410					415	
Val	Ser	Leu	Ala	Leu	Phe	Ala	Phe	Leu	Gly	Ile	Pro	Leu	Ala	Ile	Leu
			420					425					430		
Tyr	Ser	Val	Thr	Phe	Ala	Val	Thr	Ala	Gln	Leu	Ala	Ala	Asn	Arg	Cys
		435					440					445			
Gly	Gly	Gln	Trp	Leu	Cys	Thr	Gly	Val	Leu	Asn	Ile	Ala	Ile	Ala	Ile
	450					455					460				
Pro	Gln	Val	Ile	Ile	Ala	Leu	Gly	Ala	Gly	Pro	Trp	Asp	Glu	Leu	Phe
465					470					475					480
Gly	Lys	Gly	Asn	Ile	Pro	Ala	Phe	Gly	Val	Ala	Ser	Ala	Phe	Ala	Leu
				485					490					495	
Ile	Gly	Gly	Ile	Val	Gly	Ile	Phe	Leu	Leu	Pro	Lys	Ile	Ser	Arg	Leu
			500					505					510		
Gln	Phe	Arg	Ala	Val	Ser	Gly	Gly	Gly	His						
		515					520								

<210> 23  
 <211> 2030  
 <212> DNA  
 <213> Triticum aestivum

<400> 23  
 cggaagcgac gccgcgcggc ccaaggagga acagggcagc ggcgcggggg cgggggaagg 60  
 cgcatgaag ggcgcgccc agtggcgggt ggtgctggcc tgcattggtc cgcgcggcgt 120  
 gcagttcggc tgggcgctcc agctctccct cctcaccccc tacatccaga ctctaggaat 180  
 agaccatgcc atggcgctct tcatcttggt ttgcggggccc attactggtt ttgtggttca 240  
 accgtgtggt ggtgtctgga gtgacaagt cgcgtccaag tacgggagga gacggccggt 300  
 cattttggct ggatgcgtgc tgatttggtc agctgtaact ttagtcgggt tttctgcaga 360  
 ccttggttac atgttaggag acaccactga gcaactgcag acatacaaag gtctacgata 420  
 tcgagctgct tttattttca tttttggatt ctggatgctg gaccttgcaa ataatacagt 480  
 tcaaggacct gctcgtgcc tcctagctga tctttcaggt cccgatcaat gtaattcggc 540  
 aatgcaata ttctgctcat ggatggctgt tggaaacgtt cttggttttt cagctggtgc 600  
 gagtgggaat tggcacaagt ggtttccttt tctgatgact agggcctgtt gtgaagcttg 660  
 tggaatttg aaagcagctt tcttgattgc agttgtattc cttctgtttt gcatggctgt 720  
 taccctctac tttgctgaag agattccact ggaaccaaag gatgcacagc agttatctga 780  
 ctccgctcct ctactgaacg gttctagaga tgatcatgat gcttcaagt aacagactaa 840  
 tggaggactt tctaacgggc atgctgatgc aaacatgtc tcagctaact ccagtgcaga 900  
 tgcaggttcc aactcgaaca aggacgatgt tgaggctttc aatgatggac caggagcagt 960  
 tttggttaaa attttgacta gcatgaggca tctacctcct ggaatgtatt ccgtgcttct 1020  
 gggtatggcc ctaacatggc tgcgtggtt tccctttttc ctttttgaca ccgactggat 1080  
 ggggcgtgag gtttatcacg gtgacccaaa aggaaacgcg agtgaaagga aagcttatga 1140  
 tgatggtgct cgagaagggt catttggttt gctattgaat tcagtcgtcc ttgggattgg 1200  
 ctctttcctt atcgatccat tatgccgat gattggtgca agattggtt gggcaatcag 1260  
 caacttata gtgtttgcct gcatgttggc tacaacaata ctaagtggga tctcctatga 1320  
 cctgtactcg agcaagctt aacatattgt cggggcagat aaaacagtca agacctcagc 1380  
 gcttattctt ttctctcttc tcggattgcc actctcgatc acttatagt ttcggttctc 1440  
 cgtgactgct gagctgactg ccggaacagg aggcggacaa ggtttggcta ctggagttct 1500  
 gaatcttgcc atcgctgctc ctcagatagt agtgctactc ggagcaggcc catgggacaa 1560  
 gctcttgggg ggagggaaacg tccccgcttt cgccttgccc tcggtcttct cgctagcagc 1620  
 cggagtgtc gcggtgatca agctgcccac gttgtcgaac aattaccaat ccgcgcggtt 1680  
 ccacatggg tgaaccctaa agcccgaagc cagctgctgt gtgtaacatc cagatgttta 1740  
 gtaccaatcc gccggtttcc atattaagat tcgtttatat ggagatgatt ctttttctcc 1800  
 tcttgctaga tacacagtta ataagactac agactagata aagagatagt 1860  
 ttttaggcct gtgtgcatac aagtgtcgat gagaagttgt aaaacatgta cactgttttt 1920  
 ttgtactgta tatgtagtga aatttcatag atggccggat gtgttctggt ccgataaaaa 1980  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2030

<210> 24  
 <211> 563  
 <212> PRT  
 <213> Triticum aestivum

<400> 24  
 Gly Ser Asp Ala Ala Arg Pro Lys Glu Glu Gln Gly Ser Gly Ala Gly  
 1 5 10 15  
 Ala Gly Glu Gly Gly Met Lys Gly Ala Pro Lys Trp Arg Val Val Leu  
 20 25 30  
 Ala Cys Met Val Ala Ala Gly Val Gln Phe Gly Trp Ala Leu Gln Leu  
 35 40 45  
 Ser Leu Leu Thr Pro Tyr Ile Gln Thr Leu Gly Ile Asp His Ala Met  
 50 55 60  
 Ala Ser Phe Ile Trp Leu Cys Gly Pro Ile Thr Gly Phe Val Val Gln  
 65 70 75 80

Pro Cys Val Gly Val Trp Ser Asp Lys Cys Arg Ser Lys Tyr Gly Arg  
 85 90 95  
 Arg Arg Pro Phe Ile Leu Ala Gly Cys Val Leu Ile Cys Ala Ala Val  
 100 105 110  
 Thr Leu Val Gly Phe Ser Ala Asp Leu Gly Tyr Met Leu Gly Asp Thr  
 115 120 125  
 Thr Glu His Cys Ser Thr Tyr Lys Gly Leu Arg Tyr Arg Ala Ala Phe  
 130 135 140  
 Ile Phe Ile Phe Gly Phe Trp Met Leu Asp Leu Ala Asn Asn Thr Val  
 145 150 155 160  
 Gln Gly Pro Ala Arg Ala Leu Leu Ala Asp Leu Ser Gly Pro Asp Gln  
 165 170 175  
 Cys Asn Ser Ala Asn Ala Ile Phe Cys Ser Trp Met Ala Val Gly Asn  
 180 185 190  
 Val Leu Gly Phe Ser Ala Gly Ala Ser Gly Asn Trp His Lys Trp Phe  
 195 200 205  
 Pro Phe Leu Met Thr Arg Ala Cys Cys Glu Ala Cys Gly Asn Leu Lys  
 210 215 220  
 Ala Ala Phe Leu Ile Ala Val Val Phe Leu Leu Phe Cys Met Ala Val  
 225 230 235 240  
 Thr Leu Tyr Phe Ala Glu Glu Ile Pro Leu Glu Pro Lys Asp Ala Gln  
 245 250 255  
 Gln Leu Ser Asp Ser Ala Pro Leu Leu Asn Gly Ser Arg Asp Asp His  
 260 265 270  
 Asp Ala Ser Ser Glu Gln Thr Asn Gly Gly Leu Ser Asn Gly His Ala  
 275 280 285  
 Asp Ala Asn His Val Ser Ala Asn Ser Ser Ala Asp Ala Gly Ser Asn  
 290 295 300  
 Ser Asn Lys Asp Asp Val Glu Ala Phe Asn Asp Gly Pro Gly Ala Val  
 305 310 315 320  
 Leu Val Lys Ile Leu Thr Ser Met Arg His Leu Pro Pro Gly Met Tyr  
 325 330 335  
 Ser Val Leu Leu Val Met Ala Leu Thr Trp Leu Ser Trp Phe Pro Phe  
 340 345 350  
 Phe Leu Phe Asp Thr Asp Trp Met Gly Arg Glu Val Tyr His Gly Asp  
 355 360 365  
 Pro Lys Gly Asn Ala Ser Glu Arg Lys Ala Tyr Asp Asp Gly Val Arg  
 370 375 380  
 Glu Gly Ala Phe Gly Leu Leu Leu Asn Ser Val Val Leu Gly Ile Gly  
 385 390 395 400



Ser Phe Leu Ile Asp Pro Leu Cys Arg Met Ile Gly Ala Arg Leu Val  
 405 410 415  
 Trp Ala Ile Ser Asn Phe Ile Val Phe Ala Cys Met Leu Ala Thr Thr  
 420 425 430  
 Ile Leu Ser Trp Ile Ser Tyr Asp Leu Tyr Ser Ser Lys Leu Gln His  
 435 440 445  
 Ile Val Gly Ala Asp Lys Thr Val Lys Thr Ser Ala Leu Ile Leu Phe  
 450 455 460  
 Ser Leu Leu Gly Leu Pro Leu Ser Ile Thr Tyr Ser Val Pro Phe Ser  
 465 470 475 480  
 Val Thr Ala Glu Leu Thr Ala Gly Thr Gly Gly Gly Gln Gly Leu Ala  
 485 490 495  
 Thr Gly Val Leu Asn Leu Ala Ile Val Ala Pro Gln Ile Val Val Ser  
 500 505 510  
 Leu Gly Ala Gly Pro Trp Asp Lys Leu Leu Gly Gly Gly Asn Val Pro  
 515 520 525  
 Ala Phe Ala Leu Ala Ser Val Phe Ser Leu Ala Ala Gly Val Leu Ala  
 530 535 540  
 Val Ile Lys Leu Pro Lys Leu Ser Asn Asn Tyr Gln Ser Ala Gly Phe  
 545 550 555 560  
 His Met Gly

<210> 25  
 <211> 501  
 <212> PRT  
 <213> Daucus carota

<400> 25  
 Met Ala Gly Pro Glu Ala Asp Arg Asn Arg His Arg Gly Gly Ala Thr  
 1 5 10 15  
 Ala Ala Pro Pro Pro Arg Ser Arg Val Ser Leu Arg Leu Leu Leu Arg  
 20 25 30  
 Val Ala Ser Val Ala Cys Gly Ile Gln Phe Gly Trp Ala Leu Gln Leu  
 35 40 45  
 Ser Leu Leu Thr Pro Tyr Val Gln Glu Leu Gly Ile Pro His Ala Trp  
 50 55 60  
 Ser Ser Ile Ile Trp Leu Cys Gly Pro Leu Ser Gly Leu Leu Val Gln  
 65 70 75 80  
 Pro Ile Val Gly His Met Ser Asp Gln Cys Thr Ser Lys Tyr Gly Arg  
 85 90 95  
 Arg Arg Pro Phe Ile Val Ala Gly Gly Thr Ala Ile Ile Leu Ala Val  
 100 105 110  
 Ile Ile Ile Ala His Ser Ala Asp Ile Gly Gly Leu Leu Gly Asp Thr

115					120					125					
Ala	Asp	Asn	Lys	Thr	Met	Ala	Ile	Val	Ala	Phe	Val	Ile	Gly	Phe	Trp
130					135					140					
Ile	Leu	Asp	Val	Ala	Asn	Asn	Met	Thr	Gln	Gly	Pro	Cys	Arg	Ala	Leu
145					150					155					160
Leu	Ala	Asp	Leu	Thr	Gly	Asn	Asp	Ala	Arg	Arg	Thr	Arg	Val	Ala	Asn
				165					170					175	
Ala	Tyr	Phe	Ser	Leu	Phe	Met	Ala	Ile	Gly	Asn	Val	Leu	Gly	Tyr	Ala
			180					185					190		
Thr	Gly	Ala	Tyr	Ser	Gly	Trp	Tyr	Lys	Val	Phe	Pro	Phe	Ser	Leu	Thr
		195					200					205			
Ser	Ser	Cys	Thr	Ile	Asn	Cys	Ala	Asn	Leu	Lys	Ser	Ala	Phe	Tyr	Ile
		210				215					220				
Asp	Ile	Ile	Phe	Ile	Ile	Ile	Thr	Thr	Tyr	Ile	Ser	Ile	Ser	Ala	Ala
225					230					235					240
Lys	Glu	Arg	Pro	Arg	Ile	Ser	Ser	Gln	Asp	Gly	Pro	Gln	Phe	Ser	Glu
				245					250					255	
Asp	Gly	Thr	Ala	Gln	Ser	Gly	His	Ile	Glu	Glu	Ala	Phe	Leu	Trp	Glu
			260					265					270		
Leu	Phe	Gly	Thr	Phe	Arg	Leu	Leu	Pro	Gly	Ser	Val	Trp	Val	Ile	Leu
		275					280					285			
Leu	Val	Thr	Cys	Leu	Asn	Trp	Ile	Gly	Trp	Phe	Pro	Phe	Ile	Leu	Phe
		290				295					300				
Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	Tyr	Gly	Gly	Glu	Pro	Asn	Gln
305					310					315					320
Gly	Gln	Ser	Tyr	Ser	Asp	Gly	Val	Arg	Met	Gly	Ala	Phe	Gly	Leu	Met
				325					330					335	
Met	Asn	Ser	Val	Val	Leu	Gly	Ile	Thr	Ser	Val	Leu	Met	Glu	Lys	Leu
			340					345					350		
Cys	Arg	Ile	Trp	Gly	Ser	Gly	Phe	Met	Trp	Gly	Leu	Ser	Asn	Ile	Leu
		355					360					365			
Met	Thr	Ile	Cys	Phe	Phe	Ala	Met	Leu	Leu	Ile	Thr	Phe	Ile	Ala	Lys
		370				375					380				
Asn	Met	Asp	Tyr	Gly	Thr	Asn	Pro	Pro	Pro	Asn	Gly	Ile	Val	Ile	Ser
385					390					395					400
Ala	Leu	Ile	Val	Phe	Ala	Ile	Leu	Gly	Ile	Pro	Leu	Ala	Ile	Thr	Tyr
				405					410					415	
Ser	Val	Pro	Tyr	Ala	Leu	Val	Ser	Thr	Arg	Ile	Glu	Ser	Leu	Gly	Leu
			420					425					430		
Gly	Gln	Gly	Leu	Ser	Met	Gly	Val	Leu	Asn	Leu	Ala	Ile	Val	Val	Pro
		435					440					445			

Gln Val Ile Val Ser Leu Gly Ser Gly Pro Trp Asp Gln Leu Phe Gly  
450 455 460

Gly Gly Asn Ser Pro Ala Phe Val Val Ala Ala Leu Ser Ala Phe Ala  
465 470 475 480

Ala Gly Leu Ile Ala Leu Ile Ala Ile Arg Arg Pro Arg Val Asp Lys  
485 490 495

Ser Arg Leu His His  
500

<210> 26  
<211> 537  
<212> PRT  
<213> *Oryza sativa*

<400> 26  
Met Ala Arg Gly Ser Gly Ala Gly Gly Gly Gly Gly Gly Gly Gly Gly  
1 5 10 15

Gly Leu Glu Leu Ser Val Gly Val Gly Gly Gly Gly Ala Arg Gly Gly  
20 25 30

Gly Gly Gly Glu Ala Ala Ala Ala Val Glu Thr Ala Ala Pro Ile Ser  
35 40 45

Leu Gly Arg Leu Ile Leu Ser Gly Met Val Ala Gly Gly Val Gln Tyr  
50 55 60

Gly Trp Ala Leu Gln Leu Ser Leu Leu Thr Pro Tyr Val Gln Thr Leu  
65 70 75 80

Gly Leu Ser His Ala Leu Thr Ser Phe Met Trp Leu Cys Gly Pro Ile  
85 90 95

Ala Gly Met Val Val Gln Pro Cys Val Gly Leu Tyr Ser Asp Arg Cys  
100 105 110

Thr Ser Lys Trp Gly Arg Arg Arg Pro Tyr Ile Leu Thr Gly Cys Val  
115 120 125

Leu Ile Cys Leu Ala Val Val Val Ile Gly Phe Ser Ala Asp Ile Gly  
130 135 140

Tyr Ala Met Gly Asp Thr Lys Glu Asp Cys Ser Val Tyr His Gly Ser  
145 150 155 160

Arg Trp His Ala Ala Ile Val Tyr Val Leu Gly Phe Trp Leu Leu Asp  
165 170 175

Phe Ser Asn Asn Thr Val Gln Gly Pro Ala Arg Ala Leu Met Ala Asp  
180 185 190

Leu Ser Gly Arg His Gly Pro Gly Thr Ala Asn Ser Ile Phe Cys Ser  
195 200 205

Trp Met Ala Met Gly Asn Ile Leu Gly Tyr Ser Ser Gly Ser Thr Asn  
210 215 220

Asn	Trp	His	Lys	Trp	Phe	Pro	Phe	Leu	Lys	Thr	Arg	Ala	Cys	Cys	Glu	225	230	235	240
Ala	Cys	Ala	Asn	Leu	Lys	Gly	Ala	Phe	Leu	Val	Ala	Val	Ile	Phe	Leu	245	250	255	
Ser	Leu	Cys	Leu	Val	Ile	Thr	Leu	Ile	Phe	Ala	Lys	Glu	Val	Pro	Phe	260	265	270	
Lys	Gly	Asn	Ala	Ala	Leu	Pro	Thr	Lys	Ser	Asn	Glu	Pro	Ala	Glu	Pro	275	280	285	
Glu	Gly	Thr	Gly	Pro	Leu	Ala	Val	Leu	Lys	Gly	Phe	Arg	Asn	Leu	Pro	290	295	300	
Thr	Gly	Met	Pro	Ser	Val	Leu	Ile	Val	Thr	Gly	Leu	Thr	Trp	Leu	Ser	305	310	315	320
Trp	Phe	Pro	Phe	Ile	Leu	Tyr	Asp	Thr	Asp	Trp	Met	Gly	Arg	Glu	Ile	325	330	335	
Tyr	His	Gly	Asp	Pro	Lys	Gly	Thr	Asp	Pro	Gln	Ile	Glu	Ala	Phe	Asn	340	345	350	
Gln	Gly	Val	Arg	Ala	Gly	Ala	Phe	Gly	Leu	Leu	Leu	Asn	Ser	Ile	Val	355	360	365	
Leu	Gly	Phe	Ser	Ser	Phe	Leu	Ile	Glu	Pro	Met	Cys	Arg	Lys	Val	Gly	370	375	380	
Pro	Arg	Val	Val	Trp	Val	Thr	Ser	Asn	Phe	Leu	Val	Cys	Ile	Ala	Met	385	390	395	400
Ala	Ala	Thr	Ala	Leu	Ile	Ser	Phe	Trp	Ser	Leu	Lys	Asp	Phe	His	Gly	405	410	415	
Thr	Val	Gln	Lys	Ala	Ile	Thr	Ala	Asp	Lys	Ser	Ile	Lys	Ala	Val	Cys	420	425	430	
Leu	Val	Leu	Phe	Ala	Phe	Leu	Gly	Val	Pro	Leu	Ala	Val	Leu	Tyr	Ser	435	440	445	
Val	Pro	Phe	Ala	Val	Thr	Ala	Gln	Leu	Ala	Ala	Thr	Arg	Gly	Gly	Gly	450	455	460	
Gln	Gly	Leu	Cys	Thr	Gly	Val	Leu	Asn	Ile	Ser	Ile	Val	Ile	Pro	Gln	465	470	475	480
Val	Val	Ile	Ala	Leu	Gly	Ala	Gly	Pro	Trp	Asp	Glu	Leu	Phe	Gly	Lys	485	490	495	
Gly	Asn	Ile	Pro	Ala	Phe	Gly	Leu	Ala	Ser	Gly	Phe	Ala	Leu	Ile	Gly	500	505	510	
Gly	Val	Ala	Gly	Ile	Phe	Leu	Leu	Pro	Lys	Ile	Ser	Lys	Arg	Gln	Phe	515	520	525	
Trp	Ser	Val	Ser	Met	Gly	Gly	Gly	His								530	535		

<210> 27

<211> 533  
<212> PRT  
<213> Ricinus communis

<400> 27

Met	Gln	Ser	Ser	Thr	Ser	Lys	Glu	Asn	Lys	Gln	Pro	Pro	Ser	Ser	Gln	
1				5					10					15		
Pro	His	Pro	Pro	Pro	Leu	Met	Val	Ala	Gly	Ala	Ala	Glu	Pro	Asn	Ser	
			20					25					30			
Ser	Pro	Leu	Arg	Lys	Val	Val	Met	Val	Ala	Ser	Ile	Ala	Ala	Gly	Ile	
		35					40					45				
Gln	Phe	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val	Gln	
	50					55					60					
Leu	Leu	Gly	Ile	Pro	His	Thr	Trp	Ala	Ala	Phe	Ile	Trp	Leu	Cys	Gly	
65					70					75					80	
Pro	Ile	Ser	Gly	Met	Leu	Val	Gln	Pro	Ile	Val	Gly	Tyr	His	Ser	Asp	
				85					90					95		
Arg	Cys	Thr	Ser	Arg	Phe	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Ala	Ser	Gly	
			100					105					110			
Ala	Ala	Phe	Val	Ala	Ile	Ala	Val	Phe	Leu	Ile	Gly	Tyr	Ala	Ala	Asp	
		115					120					125				
Leu	Gly	His	Leu	Ser	Gly	Asp	Ser	Leu	Asp	Lys	Ser	Pro	Lys	Thr	Arg	
	130					135					140					
Ala	Ile	Ala	Ile	Phe	Val	Val	Gly	Phe	Trp	Ile	Leu	Asp	Val	Ala	Asn	
145					150					155					160	
Asn	Met	Leu	Gln	Gly	Pro	Cys	Arg	Ala	Leu	Leu	Ala	Asp	Leu	Ser	Gly	
			165						170					175		
Thr	Ser	Gln	Lys	Lys	Thr	Arg	Thr	Ala	Asn	Ala	Leu	Phe	Ser	Phe	Phe	
			180					185					190			
Met	Ala	Val	Gly	Asn	Val	Leu	Gly	Tyr	Ala	Ala	Gly	Ala	Tyr	Thr	His	
		195					200					205				
Leu	Tyr	Lys	Leu	Phe	Pro	Phe	Thr	Lys	Thr	Thr	Ala	Cys	Asp	Val	Tyr	
	210					215					220					
Cys	Ala	Asn	Leu	Lys	Ser	Cys	Phe	Phe	Ile	Ser	Ile	Val	Leu	Leu	Leu	
225					230					235					240	
Ser	Leu	Thr	Val	Leu	Ala	Leu	Ser	Tyr	Val	Lys	Glu	Lys	Pro	Trp	Ser	
				245					250					255		
Pro	Asp	Gln	Ala	Val	Asp	Asn	Ala	Glu	Asp	Asp	Thr	Ala	Ser	Gln	Ala	
			260					265					270			
Ser	Ser	Ser	Ala	Gln	Pro	Met	Pro	Phe	Phe	Gly	Glu	Ile	Leu	Gly	Ala	
		275					280					285				
Phe	Lys	Asn	Leu	Lys	Arg	Pro	Met	Trp	Ile	Leu	Leu	Leu	Val	Thr	Cys	
	290					295					300					

Leu Asn Trp Ile Ala Trp Phe Pro Phe Leu Leu Phe Asp Thr Asp Trp  
 305 310 315 320  
 Met Gly Arg Glu Val Tyr Gly Gly Asp Ser Ser Gly Ser Ala Glu Gln  
 325 330 335  
 Leu Lys Leu Tyr Asp Arg Gly Val Arg Ala Gly Ala Leu Gly Leu Met  
 340 345 350  
 Leu Asn Ser Val Val Leu Gly Phe Thr Ser Leu Gly Val Glu Val Leu  
 355 360 365  
 Ala Arg Gly Val Gly Gly Val Lys Arg Leu Trp Gly Ile Val Asn Phe  
 370 375 380  
 Val Leu Ala Val Cys Leu Ala Met Thr Val Leu Val Thr Lys Gln Ala  
 385 390 395 400  
 Glu Ser Thr Arg Arg Phe Ala Thr Val Ser Gly Gly Ala Lys Val Pro  
 405 410 415  
 Leu Pro Pro Pro Ser Gly Val Lys Ala Gly Ala Leu Ala Leu Phe Ala  
 420 425 430  
 Val Met Gly Val Pro Gln Ala Ile Thr Tyr Ser Ile Pro Phe Ala Leu  
 435 440 445  
 Ala Ser Ile Phe Ser Asn Thr Ser Gly Ala Gly Gln Gly Leu Ser Leu  
 450 455 460  
 Gly Val Leu Asn Leu Ser Ile Val Ile Pro Gln Met Ile Val Ser Val  
 465 470 475 480  
 Ala Ala Gly Pro Trp Asp Ala Leu Phe Gly Gly Gly Asn Leu Pro Ala  
 485 490 495  
 Phe Val Val Gly Ala Val Ala Ala Leu Ala Ser Gly Ile Phe Ala Leu  
 500 505 510  
 Thr Met Leu Pro Ser Pro Gln Pro Asp Met Pro Ser Ala Lys Ala Leu  
 515 520 525  
 Thr Ala Ala Phe His  
 530

<210> 28  
 <211> 523  
 <212> PRT  
 <213> Vicia faba

<400> 28  
 Met Glu Pro Leu Ser Ser Thr Lys Gln Ile Asn Asn Asn Asn Asn Leu  
 1 5 10 15  
 Ala Lys Pro Ser Ser Leu His Val Glu Thr Gln Pro Leu Glu Pro Ser  
 20 25 30  
 Pro Leu Arg Lys Ile Met Val Val Ala Ser Ile Ala Ala Gly Val Gln  
 35 40 45

Phe	Gly	Trp	Ala	Leu	Gln	Leu	Ser	Leu	Leu	Thr	Pro	Tyr	Val	Gln	Leu	50	55	60
Leu	Gly	Ile	His	His	Thr	Trp	Ala	Ala	Tyr	Ile	Trp	Leu	Cys	Gly	Pro	65	70	75
Ile	Ser	Gly	Met	Leu	Val	Gln	Pro	Ile	Val	Gly	Tyr	His	Ser	Asp	Arg	85	90	95
Cys	Thr	Ser	Arg	Phe	Gly	Arg	Arg	Arg	Pro	Phe	Ile	Ala	Ala	Gly	Ser	100	105	110
Ile	Ala	Val	Ala	Ile	Ala	Val	Phe	Leu	Ile	Gly	Tyr	Ala	Ala	Asp	Leu	115	120	125
Gly	His	Ser	Phe	Gly	Asp	Ser	Leu	Asp	Gln	Lys	Val	Arg	Pro	Arg	Ala	130	135	140
Ile	Gly	Ile	Phe	Val	Val	Gly	Phe	Trp	Ile	Leu	Asp	Val	Ala	Asn	Asn	145	150	155
Met	Leu	Gln	Gly	Pro	Cys	Arg	Ala	Leu	Leu	Gly	Asp	Leu	Cys	Ala	Gly	165	170	175
Asn	Gln	Arg	Lys	Thr	Arg	Asn	Ala	Asn	Ala	Phe	Phe	Ser	Phe	Phe	Met	180	185	190
Ala	Val	Gly	Asn	Val	Leu	Gly	Tyr	Ala	Ala	Gly	Ala	Tyr	Ser	Lys	Leu	195	200	205
Tyr	His	Val	Phe	Pro	Phe	Thr	Lys	Thr	Lys	Ala	Cys	Asn	Val	Tyr	Cys	210	215	220
Ala	Asn	Leu	Lys	Ser	Cys	Phe	Phe	Leu	Ser	Ile	Ala	Leu	Leu	Thr	Val	225	230	235
Leu	Ala	Thr	Ser	Ala	Leu	Ile	Tyr	Val	Lys	Glu	Thr	Ala	Leu	Thr	Pro	245	250	255
Glu	Lys	Thr	Val	Val	Thr	Thr	Glu	Asp	Gly	Gly	Ser	Ser	Gly	Gly	Met	260	265	270
Pro	Cys	Phe	Gly	Gln	Leu	Ser	Gly	Ala	Phe	Lys	Glu	Leu	Lys	Arg	Pro	275	280	285
Met	Trp	Ile	Leu	Leu	Leu	Val	Thr	Cys	Leu	Asn	Trp	Ile	Ala	Trp	Phe	290	295	300
Pro	Phe	Leu	Leu	Phe	Asp	Thr	Asp	Trp	Met	Gly	Lys	Glu	Val	Tyr	Gly	305	310	315
Gly	Thr	Val	Gly	Glu	Gly	His	Ala	Tyr	Asp	Met	Gly	Val	Arg	Glu	Gly	325	330	335
Ala	Leu	Gly	Leu	Met	Leu	Asn	Ser	Val	Val	Leu	Gly	Ala	Thr	Ser	Leu	340	345	350
Gly	Val	Asp	Ile	Leu	Ala	Arg	Gly	Val	Gly	Gly	Val	Lys	Arg	Leu	Trp	355	360	365
Gly	Ile	Val	Asn	Phe	Leu	Leu	Ala	Ile	Cys	Leu	Gly	Leu	Thr	Val	Leu			

370

375

380

Val Thr Lys Leu Ala Gln His Ser Arg Gln Tyr Ala Pro Gly Thr Gly  
385 390 395 400

Ala Leu Gly Asp Pro Leu Pro Pro Ser Glu Gly Ile Lys Ala Gly Ala  
405 410 415

Leu Thr Leu Phe Ser Val Leu Gly Val Pro Leu Ala Ile Thr Tyr Ser  
420 425 430

Ile Pro Phe Ala Leu Ala Ser Ile Phe Ser Ser Thr Ser Gly Ala Gly  
435 440 445

Gln Gly Leu Ser Leu Gly Val Leu Asn Leu Ala Ile Val Ile Pro Gln  
450 455 460

Met Phe Val Ser Val Leu Ser Gly Pro Trp Asp Ala Leu Phe Gly Gly  
465 470 475 480

Gly Asn Leu Pro Ala Phe Val Val Gly Ala Val Ala Ala Leu Ala Ser  
485 490 495

Gly Ile Leu Ser Ile Ile Leu Leu Pro Ser Pro Pro Pro Asp Met Ala  
500 505 510

Lys Ser Val Ser Ala Thr Gly Gly Gly Phe His  
515 520

C/  
cont.